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AN OUTLINE OF THE PREHISTORY OF SIBERIA[1]
PART 1. THE PRE-METAL PERIODS

CHESTER S. CHARD

SUFFICIENT DATA are now at hand to warrant an attempt at sketching the broad outlines of Siberian prehistory, particularly in view of the interest which this area holds for many American anthropologists and the great dearth of accessible information. For the most part, this paper will reflect the current published views of those Soviet archaeologists most conversant with the subject. It does not pretend to be a substitute for detailed, critical summaries, which are best undertaken region by region.[2] It should, however, serve as a guide to the basic literature on Siberian archaeology. For the benefit of those unfamiliar with the Russian language, an effort has been made to give specific references to useful illustrations, and to indicate English sources wherever possible.[3]

The area here referred to as Siberia will be taken to mean all the Asiatic territory of the Soviet Union with the exception of the Central Asiatic republics (Kazakhstan, Turkmenistan, Uzbekistan, Tadzhikistan, and the Kirgiz SSR), or, in other words, that part of the Russian Soviet Federated Socialist Republic lying east of the Ural watershed.

1 The author is greatly indebted to Marija Gimbutas, Hallam L. Movius, Jr., and Lauriston Ward, who were kind enough to read the original draft and to offer many valuable suggestions.

2 E.g. Movius (1953b) on the Palaeolithic and Mesolithic of Soviet Central Asia; Jettmar (1950, 1951) on the Altai; Michael (n.d.) on the Neolithic of interior eastern Siberia; Shimkin on western Siberia (to appear in Proceedings, Vth International Congress of Anthropological and Ethnological Sciences); Chard (1955b) on the Siberian Eskimo sites.

3 Readers wishing to keep abreast of subsequent developments and publications in Siberian archaeology are referred to the COWA Surveys and Bibliographies for Area 18 (Northern Asia) published biennially by the Council for Old World Archaeology, Inc., 11 Divinity Avenue, Cambridge 38, Mass. (No. 1, Fall 1957).

PALAEOLITHIC

Since a detailed summary of the Siberian Palaeolithic sites by Movius may be expected, discussion of this period will be limited to generalities.[4]

There is no evidence of any human occupation of Siberia prior to the late stages of the Upper Palaeolithic — despite the absence of glaciation over much of the central and eastern portions.[5] The oldest group of sites is probably "later than the Würm III (Bühl) substage in terms of the Alpine glacial sequence, and hence roughly corresponds in age with the Magdalenian of western Europe."[6] On the other hand, Palaeolithic cultures persisted here much later than elsewhere; the youngest sites may be contemporary with the Boreal or even the early Atlantic interval of the Baltic sequence, since they are associated with a modern fauna.[6]

Some 150 sites of the Siberian Palaeolithic have been reported to date, but these are almost all concentrated in four relatively limited areas: the upper Ob valley (centering around modern Biisk), the upper Yenisei valley from Minusinsk to Krasnoyarsk, the Angara and Selenga River basins near Lake Baikal, and the upper Lena River.[7] The most northerly Palaeolithic sites in the world are those at 61° North Latitude on the Lena.[8] The vast lowlands of western Siberia seem to have been occupied by continental ice and extensive extra-glacial lakes and marshes which rendered this entire area unsuitable for regular human settlement.[9] However, in Sverdlovsk and Cheliabinsk provinces *(oblast)* on the east slope of the Urals at least three possibly Palaeolithic sites were reported found during the period roughly from 1941 to 1951, the stone industry of which, according to Sal'nikov,[10] belongs with the Siberian Palaeolithic and not with that of Europe. I have not been able to locate any additional data on these sites. But it should be noted that Talitskii's site to the west of the Urals, near Molotov, is said to show Siberian affinities suggesting an early Asiatic penetration into this region.[11]

4 Useful surveys will be found in Movius, 1953a, pp. 186-187; Levin, 1951, pp. 469-476; and relevant sections of chapters 6 and 7 in Efimenko, 1953. For a catalogue of sites as of 1941 with full bibliographies, see Efimenko and Beregovaia, 1941, pp. 281-290.

5 A generally reliable though poorly presented map of Siberian glaciation is readily accessible in Flint, 1947, p. 350.

6 Movius, 1953a, p. 187.

7 The most recent map of Palaeolithic localities appears in *Ocherki Istorii SSSR,* facing p. 20.

8 The Lena sites are described in Okladnikov, 1953. The identification of the northern ones as Palaeolithic rests on purely typological and stratigraphic evidence, and is not beyond criticism; see Formozov's review in *Vestnik Drevnei Istorii,* 1954, no. 3, p. 103.

9 Movius, 1955.

10 Sal'nikov, 1952a, p. 24.

11 Levin, 1951, p. 474. The present writer has since examined the material and does not agree with this preliminary interpretation.

Three stages are discernible in the Siberian Palaeolithic, the sequence being well established on both geological and palaeontological evidence.[12] The confusing Russian terminology often encountered ("Solutrean," "Magdalenian," "Azilian") is best avoided, as these labels are used largely in a relative chronological sense and do not imply identity with western European industries of similar name.

The oldest stage, characterized by its general similarity to the classic Upper Palaeolithic of Europe, appears confined to the Angara valley and is best represented at the site of Mal'ta, 85 km northwest of Irkutsk.[13] The associated fauna reflects the prevailing glacial climate. The population, subsisting on a wealth of big game, lived in semisubterranean dwellings which are best preserved at the nearby site of Buret' on the Angara River.[14] These structures bear a superficial resemblance to those of the Siberian Eskimo, being rectangular in plan with an entrance passage, and utilizing huge bones (here mammoth and woolly rhinoceros) for the posts. Reindeer antlers apparently served as the roof framework. Such settlements were occupied over long periods. Especially noteworthy are the female figurines of general European type (twenty were found at Mal'ta alone) and other carvings. One such figurine from Buret' is believed to portray arctic fur clothing of familiar Eskimo type.[15]

There seems little reason to doubt that the culture of the first stage of the Siberian Palaeolithic is primarily an extension of the terminal Upper Palaeolithic of eastern Europe, despite the distance involved and the lack of intervening sites. However, the presence of a small number of crude, massive stone artifacts without western analogies in at least one early site (Irkutsk Military Hospital) suggests that an east Asiatic element may have been present in the area from the beginning.[16] Unfortunately, we have no evidence of the racial type of these oldest Siberians. A child burial was found at Mal'ta, but the material has never been studied.

Stage II sites are dated to a somewhat later time by their relationship to river

12 The technological differences between these stages tend perhaps to be overemphasized. For the most part there is a considerable similarity in the tool types throughout, and it could be argued that the changing appearance of the industries is largely due to varying emphasis on certain types rather than to actual presence or absence.

13 For a convenient summary of the site with references and many illustrations, see Efimenko, 1953, pp. 471-481. Excavations have been resumed here by M. M. Gerasimov, and a definitive report may be expected.

14 See Okladnikov, 1941b. (Summary and illustrations also in Okladnikov, 1955, pp. 38-41.) Only brief notices have appeared to date on Okladnikov's excavations at Buret'. This major site is very similar to better-documented Mal'ta.

15 Okladnikov, 1941a. Also illustrated in Efimenko, 1953, p. 483.

16 Okladnikov, 1954b.

terraces and also on palaeontological grounds: the woolly rhinoceros has disappeared, and a number of species currently inhabiting the area occur. However, glacial influences on the climate are still evident. The fauna is predominantly northern and reflects a tundra or steppe landscape rather than forest. The reported sites seem to be all in the Yenisei area. Culturally, Stage II is viewed as representing a marked change and the emergence of a highly distinctive Siberian complex. European elements, though still present, dwindle in importance. The most conspicuous feature is the great quantity of massive tools very reminiscent of Mousterian in appearance and technique. Pebble tools which seemingly represent survivals of the chopper/chopping tool tradition of the Far East are also present. At the type site of Afontova Gora II (lower horizon)[17] near Krasnoyarsk on the Yenisei River, nearly half of the artifacts are large "Mousterian" scrapers, although a well-developed bone industry is also much in evidence. A characteristic feature of the latter is the spear point or dagger grooved along the sides for the insertion of flint blades. Semisubterranean dwellings were still in use here, although a more mobile type of life is thought to have prevailed now. The conspicuous art of the preceding stage had virtually died out. A cranial fragment identified as "Mongoloid" gives added grounds for postulating that the new culture represents the absorption of the previous European population by invaders from eastern Asia.

Stage III is definitely post-glacial, with an essentially modern fauna. A dry climate is indicated, with a correspondingly greater extension of steppe environment than nowadays. Movius has recently suggested a date of around 6000 BC in broad terms.[18] This, of course, is contemporary with the Mesolithic of Europe,[19] and some archaeologists would label these late sites accordingly — viewing "Mesolithic" as a chronological rather than a cultural concept. The majority, however, regard Stage III as a continuation of the Siberian Palaeolithic tradition and feel it more appropriate to so designate it. Siberia does not seem to have experienced the marked changes in environment, economy, and material culture characteristic of Europe in the post-glacial period. Traits typical for the classic Mesolithic cultures elsewhere do not appear in Siberia until later.

Sites of this final stage are not restricted geographically as was the case earlier, although the peculiar distribution of Stages I and II may prove more apparent than real. The type site is Verkholenskaia Gora[20] near Irkutsk where the stone industry is very similar to that of Afontova Gora II (crude chopping tools, large

17 Summary in Efimenko, 1953, pp. 573-577, 580-587.

18 Personal communication.

19 The somewhat earlier dating (8000-5000 BC) favored by Okladnikov (1950, p. 139) does not invalidate this.

20 Aside from brief summaries in secondary sources (e.g. Efimenko, 1953, pp. 587-589), references to this important site are conspicuously absent in Soviet literature. The excavations

scrapers, microblades). The most characteristic finds were the flat bone "Azilian harpoons" which are otherwise rare in northern Asia. Also noteworthy are large bifacial laurel-leaf points: these are not reported from any other Palaeolithic site in eastern Siberia, and are viewed as precursors of Neolithic technology.

In contrast to earlier periods, Stage III sites appear to be temporary hunting camps.

Whereas in Europe this post-glacial phase was, above all, the time when the northern regions were first peopled, in Siberia there was no significant change in the distribution of human occupation. Settlement north of 61° had to await the appearance of peoples with a Neolithic type of culture.

In concluding this brief discussion of the Siberian Palaeolithic, we should point out that it is the only known complex in this area old enough to have influenced the earliest cultures of the New World; yet there is a disappointing lack of specific parallels. Particularly puzzling is the complete absence of pressure flaking in the older stages, which is such a conspicuous feature of the contemporary New World complexes. Yet this technique is widespread in Siberia much later on a Neolithic level, including many tool types that can be duplicated in Folsom-Yuma assemblages. Perhaps the tap roots of American prehistory lie elsewhere. It is the present writer's hope that the Pacific coastal strip of Siberia may hold the answer. The archaeological evidence from later periods indicates that this zone, walled off by well-nigh impassable mountains, was to a large extent a world apart from the vast interior expanses of Siberia where the Palaeolithic cultures just described flourished; and this situation may well have prevailed during early times also.

"MESOLITHIC"

The ensuing period of Siberian prehistory — between the terminal stage of the Palaeolithic (which we have dated c. 6000 BC) and the appearance of full-fledged Neolithic cultures[21] — is the least known and most confused. The little evidence available is very unsatisfactory, and an extended study of the problem is badly needed.

The latest map of pre-Neolithic Siberian sites[22] shows only three classified as Mesolithic — all in the Amur-Maritime region where no Palaeolithic is currently recognized.

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were conducted primarily by Prof B. E. Petri of Irkutsk University, whose name was no longer mentioned in the U.S.S.R. after his abrupt disappearance c. 1936. Several of Petri's publications (e.g. 1923, 1927) contain information on Verkholenskaia Gora, and two pages of illustrations were reproduced in the *American Anthropologist*, vol. 39, pp. 483-484.

21 The term "Neolithic" will be employed throughout in the Russian sense of a pre-metal culture stage having pottery and polished stone.

22 *Ocherki Istorii SSSR*, facing p. 20.

Two of these sites were discovered in the Vladivostok area in 1953: Osinovka, where a chopping tool of southeast Asiatic tradition was found in a gravel pit;[23] and Tigrovaia, a campsite which yielded a burin identical with a type common in eastern Mongolia and comparable also to Alaskan forms.[24] Both sites were initially described as late Palaeolithic and assigned a guess-date of 6th-5th millenia BC, which would make them contemporary, broadly speaking, with the final stage of the Palaeolithic in interior Siberia. Just what their current classification as "Mesolithic" implies is not clear.[25]

The third Mesolithic site (or, rather, locality, with several sites) is the vicinity of Khabarovsk on the Amur, where hearths and workshops were discovered in 1926 by Gerasimov (his so-called "Amur Palaeolithic") and in 1935 by Okladnikov.[26] These are considered to be somewhat later than the preceding sites, although any dating is on purely typological grounds. The absence of pottery and polished stone at least suggests that they antedate the local Neolithic, which is assigned to the 3rd-2nd millenia BC. The most noteworthy items in the stone industry here are well-made chipped axes (suitable for wood-working) and pressure-flaked laurel-leaf spear points. Debets has expressed the opinion that the latter have closer typological parallels with American "Yuma" points than with anything in Siberia.[27] Unfortunately, no adequate illustrations of the Khabarovsk material have ever been published.

A famous erstwhile Mesolithic site elsewhere in Siberia should receive passing mention: Ulan Khada on the northwest shore of Lake Baikal, where the lowest of the supposed eleven levels was thought to reflect the pre-Neolithic culture of interior Siberia.[28] A reexamination of the records and collections from Ulan Khada has led Okladnikov to the conclusion that the site represents a single protracted occupation by a fully Neolithic group.[29]

In general, the Siberian Palaeolithic is thought to have evolved directly into the local Neolithic cultures, although it is only in the Baikal region,[30] where the data

23 Okladnikov, 1954a, pp. 233-234; illustration p. 233.

24 *Idem*, pp. 234-235; illustration p. 234 (left-hand figure).

25 They have also been referred to as possible "early Neolithic."

26 Okladnikov, 1954a, pp. 235-236.

27 Debets, 1951, pp. 108-109.

28 E.g. Clark, 1940, p. 133.

29 Okladnikov, 1950, pp. 53, 98-104, 108-111. The site is placed at the transition between the Serovo and Kitoi stages of the Baikal Neolithic sequence. (Also disqualified, apparently, is the essentially similar lowest level at Tsar'-Devitsa near Irkutsk *idem*, p. 114.)

30 The Baikal region from an archaeological viewpoint comprises Cis-Baikal (chiefly the valley of the Angara River and its tributaries as far as Bratsk), the adjacent headwaters of the Lena River, and Trans-Baikal (chiefly the lower Selenga valley).

are fullest, that an attempt has been made to demonstrate this process.[31] Remains reflecting a transitional stage are, however, very scanty and not well documented. This scarcity is claimed to indicate the rapidity with which the transition took place. Soviet archaeologists refer to such material as either "early" or "pre-ceramic" Neolithic — although "Mesolithic" would seem an equally appropriate label, for it is here that typically Mesolithic traits such as microlithic points appear for the first time in Siberia.

In the Angara River valley, two separate burials[32] which do not seem to fit into the pattern of local Neolithic graves have been assigned to this period on the basis of the "archaic" appearance of the artifacts found therein. On this somewhat slender foundation, Okladnikov has formulated the non-ceramic, microlithic Khina complex,[33] which is viewed as a definite stage in the Baikal sequence, corresponding culturally to late Mesolithic manifestations in the west. The most distinctive items are the partially retouched shouldered arrowpoints and the polished slate "bayonets." A limited amount of generally similar material has turned up from time to time in the Baikal region, it is true, but always as surface finds or in a few undated sites of which little if anything is known.[34]

This complex, though typologically "Mesolithic," does not, however, provide a very convincing bridge between the terminal Palaeolithic and the oldest Neolithic stage (Isakovo), having little in common with either; and hence contributes nothing to bolstering the hypothesis of a direct evolution. We must view it as floating in time, though quite possibly pre-Neolithic — if its independent status is substantiated by additional finds. Despite the very extensive field work in this area, it would be premature to regard the archaeological record as complete. While it should be emphasized that there is nothing inherently improbable in a Palaeolithic-Neolithic continuum, it seems preferable for the present to recognize a lacuna which future work will ultimately fill rather than to attempt to complete the picture with the fragments now on hand.[35]

Elsewhere in Siberia possible pre-ceramic complexes are reported from the lower Lena (Uolba Lake),[36] western Siberia (Andreev Lake),[37] and the Urals (Shigir

31 Okladnikov, 1950, chapter 5.

32 One at Khin'skaia Gorge and a disturbed one at Chastye Gorge.

33 Okladnikov, 1950, pp. 157-165; artifacts from these two graves are illustrated on pp. 159 and 161.

34 Examples are illustrated *idem*, p. 163.

35 See Chard, n.d. (c), for a more extended discussion of the Khina material and its significance.

36 Summarized in Chard, 1956b (illustrations).

37 Andreev Lake I site, briefly discussed in Chernetsov, 1953, pp. 25-26. Flint artifacts illustrated on p. 27.

peat bog).[38] These have not been claimed to represent a direct Palaeolithic-Neolithic succession. They may closely antedate their respective local Neolithic horizons, and will be discussed in that connection.

NEOLITHIC[39]

Two major cultural frontiers are discernible in Neolithic Siberia: the Yenisei River and the Pacific coastal watershed. For convenience of discussion, however, these major culture areas are best subdivided — the western one rather arbitrarily, the others into more or less distinctive regional groupings of cultures. It should be emphasized at the outset that our overall picture is very uneven, ranging from the scanty data for the Yenisei valley to the rich materials available for the Baikal region.[40] We lack any formative stages for these full-fledged Neolithic cultures — unless the non-ceramic manifestations referred to should prove to fit this role.

Baikal Region

As a result of very extensive excavation of Neolithic and early Bronze Age cemeteries on the Angara River over a considerable period, a number of burial complexes were segregated whose internal consistency and sequential relationship were quite convincingly demonstrated.[41] The reality of these complexes as cultural stages, and their relative chronology, now seem well established through subsequent excavations which include stratified habitation sites.[42] It would therefore appear unnecessary to discuss here the methodological basis originally proposed. The resultant sequence[43] is not only the most extensive and detailed in Siberia, but is important as forming the backbone for the chronology of much of eastern Siberia, cultural developments in adjoining areas being discussed in terms of it. There is sufficient identity between the mature Neolithic and Eneolithic stages to imply a

38 A considerable antiquity was attributed to this site by Briusov (1952, pp. 33-34, 146-149). This is no longer generally accepted.

39 A useful survey of Neolithic pottery traits in Siberia will be found in Tolstoy, 1953; however, the discussion of check-stamped pottery requires some revision in the light of fuller data now available. See Chard, n.d. (d).

40 That we know as much as we do about eastern Siberia is due almost entirely to A. P. Okladnikov, one of the outstanding archaeologists of the Soviet Union, who has labored for thirty years in this field.

41 Okladnikov, 1950, chaps. 2-4. For a very brief English summary, see Tolstoy's review in *American Antiquity*, vol. 18, pp. 283-285. A rather critical review by Briusov of this important work will be found in *Vestnik Drevnei Istorii*, 1951, no. 4, pp. 155-162, with a rejoinder by the author, *loc. cit.*, 1952, no. 4, pp. 199-201.

42 Summarized in Chard, 1957b, p. 32, from scattered reports.

43 For a tabular chart of the type artifacts by periods from Khina (A) to Shivera (E), see Okladnikov, 1950, p. 95.

common shared continuum of culture developing during this time without interruptions. The three younger periods are susceptible to cross-dating with better documented manifestations elsewhere, and their approximate absolute chronology (as revised here) seems relatively firm. The two older stages have no such solid basis, and were assigned rather extreme dates by Okladnikov — primarily in an effort to close the gap with the Palaeolithic. The datings recently suggested by Gimbutas[44] seem reasonable and will be followed here.

The earliest (Isakovo) stage[45] is widely distributed, but the remains are rather scanty, suggesting a relatively small population, a brief duration, or both. We are assigning it to the first half of the 3rd millenium BC. The culture is thoroughly Neolithic, although it contains some survivals of older traditions such as large crude scrapers, prismatic cores, microblades, and side-bladed bone spear points — all of which occur in the local late Palaeolithic. Fossil mammoth bone was a favorite raw material. Isakovo burials are found in small groups (two to six) and are revealed on the surface by heaps of stones which completely fill the grave pit. Interment was in extended position on the back, accompanied by numerous artifacts and ornaments. Adult males are supplied with hunting equipment. Isakovo pottery is very distinctive. Vessels have a conical base and straight rim, average 5 mm in thickness, and are 18 to 23 cm high and up to 20 cm in diameter. Quartz, granite or traprock is utilized for temper. The exterior is completely covered with small-mesh net impressions. Decoration is usually confined to a horizontal row of shallow circular pits just below the rim or on its surface. Okladnikov stresses the primitive appearance of this ware, and labels it a local invention stemming from the carrying nets of Palaeolithic hunters. Adzes are only partially polished. Numerous well-chipped arrowpoints indicate the importance of the bow in this hunting economy; the most conspicuous type has a concave base and asymetrical barbs. Later points of this type are considerably smaller and easily distinguished. The first tanged points are thought to appear at the close of the period. Position in the burials indicates that the long slotted bone points with side blades were used on spears; they differ from the somewhat similar daggers in their greater length, absence of handle, and rounded cross-section. Similar compound points from later periods are distinguished by thin bifacially-retouched blades of rectangular shape and a flattened shaft. Isakovo blades are worked only on the cutting edge (dentate) and sometimes on one face. Compound knives with Palaeolithic analogies also occur; these are unilateral with flattened shaft, and the blades are much wider and bifacially worked. The end blade is triangular. Simple stone knives — bifacial, of

44 Gimbutas, 1957.

45 Okladnikov, 1950, pp. 165-190, with numerous illustrations.

asymetrical triangular form — are common, and a few simple stone spear points are reported (one of laurel-leaf type). The large scrapers are semilunar or oval. Bone artifacts include tubular needle cases, boar's tusk ornaments, and pear-shaped beads made of maral teeth.

The succeeding Serovo stage[46] reveals a spectacular efflorescence of Neolithic techniques. It can probably be assigned to the last half of the 3rd millenium BC. Stone working in particular attained a high level, both in pressure flaking and in the fashioning of tough, durable nephrite from the Sayan Mountains into polished tools. Serevo remains are found throughout the Baikal region. Settlements are numerous, suggesting seasonal movements and considerably increased population. They are often in groups, usually located along river banks, and appear generally to have consisted of several conical shelters with pole frames, probably covered with bark in summer and skins or turf in winter, plus storehouses and workshop structures. Both interior and exterior stone hearths were used. Burials are all well-equipped and not differentiated in any fashion; females as well as males are supplied with weapons and axes along with their awls and needle cases. A stone covering for the grave is customary: sometimes a definite construction of slabs. The economy continued to be based primarily on hunting, but the role of fishing increased. One of the most striking elements of Serovo culture is the stone fish effigy evidently used as a lure in conjunction with the barbed harpoons or fish spears of many types (both unilateral and bilateral) — doubtless through the ice. Crude net sinkers and simple hooks were also employed. Hunters were equipped with a remarkable reinforced bow backed with thin plates of bone or antler, which Okladnikov claims as the oldest known example of such a weapon. Equally remarkable is its abrupt disappearance after the Serovo stage. Well-made tanged points are characteristic, though concave-based forms are also in use. In general, arrowpoints gradually diminish in size throughout the Neolithic. Also typical are the numerous large ripple-flaked lanceolate or leaf-shaped blades, which could have functioned either as spear points or (more probably) as hunting knives or daggers. These striking artifacts are not found in later periods. One specimen in particular[47] is reminiscent of our "Yuma" points. Side-bladed spear points continue in use, though in somewhat different form. A standard item of equipment is the asymetric triangular knife known earlier but here attaining greater perfection of form and finish. Adzes are of more regular forms and better made, though still

46 *Idem*, chap. 7. A considerable amount of irrelevant material is included, especially pp. 285-336 and 340-354. The following illustrations do not portray Serovo material: figs. 39, 47, 67 (2, 3), 72, 78-81, 89-99, 103.

47 *Idem*, p. 218 (center).

displaying flake scars to some degree. Ornaments are few, simple, and uniform. Some older types persist, such as pierced teeth of maral and moose, and small white disc beads appear which Okladnikov believes were made from ocean shells. Pottery displays greater sophistication than the Isakovo ware. Vessels have nearly spherical bodies, wide bases, and sometimes a suggestion of a neck. Some are provided with pierced lugs for suspension, evidently at an angle. Net impression is still the predominant form of surface treatment, but it is less common than previously and the marks are always smoothed over. Walls tend to be thinner; sand or fine gravel is used as temper. The paddle-and-anvil method of manufacture makes its appearance, although the older techniques of modelling persist alongside the new. Comb (dentate) stamp decoration now occurs for the first time, as do bosses, though simple pits continue in favor. Decoration is still fairly simple and usually confined to the neck of the pot.

Following Gimbutas and Kiselev, we correlate the Kitoi stage[48] with the Afanasievo of the Yenisei *(infra)* and hence date it approximately 2000-1650 BC, although Okladnikov would place Kitoi somewhat earlier (2500-1700). A major shift in economic emphasis is suggested by the presence of large numbers of compound fish hooks of distinct type in the burials, while hunting equipment is rare. Possible changes in social structure are thought to be indicated by significant differences for the first time in the quantity and quality of grave goods. Kitoi burials are characterized by the thick layer of red ochre which covers them. Stone construction is usually lacking. Nephrite was used almost exclusively for polished tools and was traded over considerable distances. The people were well supplied with this prized substance, and raw material as well as finished artifacts was frequently placed in graves. Kitoi adzes appear less finished in form than the Serovo ones, however. Flint chipping continued to be of high quality. Arrowpoints are triangular with concave, straight or convex base. The tanged points of the preceding period disappear as completely as the reinforced bows. A surprising feature is the reappearance of large crude scrapers of argillite, quartzite or even quartz, reminiscent of Palaeolithic forms. Compound artifacts include dagger-like forms (bilateral and unilateral) and single-bladed knives, generally similar to Serovo types. Bone-working attains a high development, much of it being decorated: daggers, dart points, pins, harpoons of many types, needle cases, possible flutes. Designs include dot and circle. The stereotyped stone shanks of the compound fish hooks are probably the most characteristic Kitoi artifact. Harpoons continue to be numerous and display improved features, but the striking stone fish effigy lures have

48 *Idem*, pp. 355-411; also fig. 14 (1, 3, 7, 8) on p. 135. The Kitoi materials are not adequately illustrated.

disappeared. Nevertheless, Okladnikov knows of no Neolithic graves anywhere containing such a quantity of fishing equipment as the Kitoi burials. The pottery of this stage is apparently known only from the upper levels of the Ulan Khada site; it does not seem to be represented in the burials. In general, it is quite similar to Serovo wares in form, and somewhat in decoration. Stamping plays a leading role in the latter, being usually applied with a broad paddle in a number of new forms. Rim castellations also appear. Combinations of design elements are basically the same as earlier, but are more profuse in execution. Examples of Kitoi art include a human head of white marble, marble rings, and bone figurines in human, animal, and fish form.

The succeeding Glazkovo stage, sometimes labelled Eneolithic, seems now to be relegated entirely to the Bronze Age and will be discussed later in that context.

Lena Valley[49]

The Lena Neolithic is viewed as sharing a common basic tradition with that of the Baikal region and initially developing along similar lines, although displaying increasingly individual features from the 3rd millenium BC onwards. These features are thought in part to represent local developments in response to differing environmental conditions, and in part to reflect outside influences from both west and east — from northern Europe as well as the Pacific slope of Siberia. Actually, however, we know nothing about the formative stages on the Lena. The earliest Neolithic sites reported already reveal a highly distinctive complex, with specific Baikal elements in the minority.[50]

The Lena valley Neolithic cannot at present be subdivided into stages or periods comparable to those of the Baikal region, although certain sites are thought to be older than others: occasionally by stratigraphic evidence or by cross-dating with Baikal; more often on a typological or more subjective basis. Already, however, we can clearly discern a northern and a southern variant of this Lena Neolithic — distinctive regional traditions existing contemporaneously in the two major environmental divisions. In the tundra and forest-tundra zones of the north are found the temporary camps and stone workshops of wandering reindeer hunters, while to the south, in the taiga of the middle Lena region, there developed a

49 The Lena valley as a culture area comprises only the lower two-thirds north of Vitim (roughly the territory of the present Yakut ASSR). The headwaters belong culturally to the Baikal region. Our knowledge of the Lena Neolithic is based entirely on the works of Okladnikov, the pioneer investigator (primarily, 1945-50 and 1955). A convenient tabular chart of the type artifacts for this area by periods from Palaeolithic to ancestral Yakut will be found in the latter volume facing p. 428.

50 For a more detailed, critical discussion of the Lena Neolithic, see Chard, 1957c.

sedentary lacustrine mode of life based largely on fishing, with some of the population possibly acquiring domestic cattle at an early date.[51] These two traditions overlap to some extent in the region of Yakutsk. The Lena culture area extends west to the Taimyr Peninsula and east to include the Kolyma River valley, thus embracing a vast region of surprisingly similar culture which is clearly set off from surrounding areas. On the south, the stretch of the Lena between Vitim and Ust Kut constitutes a transition zone to the Baikal cultures.

The oldest traces of human settlement in the far north seem to be represented by the early Uolba complex, best exemplified in the lower levels at Uolba Lake, just west of the Lena on the arctic circle. Although here it does underlie a terminal Neolithic horizon, its antiquity rests primarily on typological considerations and the possible absence of pottery. The present writer has suggested a dating of around 2000 BC as not unreasonable on the evidence adduced.[52]

A number of Lena sites afford some basis for cross-dating with the Baikal sequence. None, however, can with any assurance be placed earlier than 2500 BC, and they are more probably somewhat younger. In all cases a well-developed Neolithic complex is represented; and since this was not introduced bodily from outside, but displays many unique local features and borrowings from varied sources, we are forced to postulate the prior existence of formative stages in the area, not yet unearthed.

The major Neolithic sites on the Lena are ascribed to a stage variously labelled "mature" or "late," although time differentials are assigned to sites within this category on no very convincing basis. Kullaty, 35 km south of Yakutsk, best fulfills the role of type site despite its confused stratigraphy and other shortcomings, being one of the most fully investigated (158 sq meters uncovered) and best documented[53] Neolithic sites in Siberia. Protracted occupation is indicated by a cultural deposit up to 1.5 meters deep, whose lower levels reportedly underlie the chernozem-like soil horizon to which all other Lena sites (except Pokrovsk) and most of the Baikal Neolithic are restricted. (There are no corresponding differences in the cultural remains, however.) Only in the far north at Uolba Lake is there another site clearly reflecting a succession of Neolithic phases. Although stratified sites with metal periods overlying Neolithic remains are not uncommon, the Lena Neolithic sites themselves represent elsewhere only single phases. Kul-

51 The latter assertion is based on the discovery of teeth identified as those of domestic ox in the Neolithic site of Malaia Munku.

52 The early sites north of Yakutsk are summarized (with illustrations) in Chard, 1956b.

53 Okladnikov, 1945-50, Part 3, pp. 21-79, 145-153, plates 3-38; 1955, pp. 88-91, figs. 16 (1-3, 6, 7), 17, 20-25.

laty is considered to reveal a mature or late stage followed by a terminal Neolithic and topped off with a Bronze Age occupation. This sequence, plus the quantity of material obtained, have made Kullaty the keystone for the relative chronology of the Lena valley.

A careful perusal of Okladnikov's publications reveals the following roster of elements apparently diagnostic for the various stages at this site.

Mature Neolithic: net ware common (usually smoothed over like the Baikal Serovo ware); striated ware; decoration by linear incising (horizontal and oblique, triangles); rims thickened by addition of a wide band; absence of check stamp or applique; end scrapers on microblades; concave-edged semilunar knives (pre-Glazkovo in the Baikal region); one specific Serovo point type.

All Neolithic stages: fabric-impressed pottery; perforated rims; sharply pointed base on vessels, sometimes by addition of a separate clay spike (unique in Siberia, apparently; the Baikal pointed base ware is paraboloid).

Specifically terminal Neolithic: net ware rare; no striation; no incised decoration of previous types (some double line); first appearance of smooth-surfaced wares, check stamp, pits (round or oval) on sides of vessels, and applique; core burins; partially retouched tanged blade points of "arctic" type and trihedral points.

Bronze Age: smooth-surfaced, check-stamped and applique wares continue from terminal Neolithic. Perforations are rare; incising dies out; fabric impressions are unknown. Typical vessel shape has round base and concave neck.

Found throughout the entire site: comb stamping, pitted or notched lips, most types of arrowpoints, angle burins, side blades, microblades.

The "mature" Neolithic stage at Kullaty cannot be placed earlier than the Serovo of Baikal on the basis of shared elements (i.e. last half of the 3rd millenium BC). The terminal Neolithic stage is equated by Okladnikov with the early Glazkovo of Baikal (which we would place around 1600-1500 BC), and the Bronze Age occupation is considered to be post-Glazkovo (sometime after 1300 BC).

The terminal Neolithic stage is found in pure form and better represented at Lake Ymyiakhtaakh, a segment of a former channel of the Lena 60 km northeast of Yakutsk.[54] Here, in a deposit up to 60 cm deep, four soil horizons have been distinguished. Although their formation would seemingly have involved a considerable period of time, the cultural remains throughout appear to be identical and are viewed as transitional to Bronze Age, with which they share a number of diag-

54 Okladnikov, 1945-50, Part 1, pp. 27-36; Part 3, pp. 124-145, 151-153, figs. 29-32; 1955, pp. 91-96, figs. 26-27.

nostic elements. The most striking feature is the relative abundance of burins, all of which are of the polyhedral core variety. Arrowpoints are comparatively uncommon on this site and are predominantly straight-based (Bronze Age type). Pottery is mostly check-stamped; typically, the impressions are small, the paste contains hair tempering, and plant imprints are sometimes noted. One sherd tempered with fish scales was found — the only known occurrence (at least in the USSR.). Vessel form was apparently almost globular, rims were perforated, and the standard decoration is a band of incised zigzag lines. There are also some smooth-surfaced wares with rather crude rounded fillet applique, comb stamping and circular pits. The absence of such characteristic mature Neolithic ceramic techniques as net impression, fabric impression, striation, elaborate incised decoration, thickened rims, and pointed bases further confirms the later age of this complex.

The contemporary stage on the arctice circle is probably represented by the upper level at Uolba Lake[55] and the neighboring sites on Lake Kylarsa.[56] Concave-based triangular bifacial arrowpoints, polyhedral core burins, and specific forms of scrapers, side blades, and semilunar knives are found in the Uolba site. At Lake Kylarsa, several types of tanged points occur, including partially-retouched blade forms reminiscent of the oldest stage in this region, though much smaller in size. The rather crude round-bottomed pottery is mostly hair- or vegetable-tempered; usual surface treatment is some form of check stamping (large, small, rhombic), and, at the Lake Kylarsa sites, corrugation or linear stamping. Smooth sherds (sometimes showing hair imprint) predominate at Kylarsa I, and some incised decoration occurs at Kylarsa II. These sites do not represent a uniform complex, but are roughly equated by the presence of stamped pottery and core burins.

Still farther north, beyond the arctic circle, the prehistoric sites are of a different character. Instead of relatively stable settlements of lake fishers we find only temporary campsites and workshops of the wandering reindeer hunters of the tundra, concentrated in certain favorable localities. Attempts to classify these remains chronologically must resort to typology and rather tenuous cross-dating. The possibly early sites in this area have been summarized elsewhere.[57] Of the remaining sites,[58] the Khairgas workshop below Bulun is outstanding. Two bluffs here are littered with immense quantities of debris: chips, rejects, blanks and raw materials — but no trace of finished products. Evidently only the preliminary stages of

55 Okladnikov, 1945-50, Part 2, pp. 3, 10-35, 142-144, plates 1 and 3; 1955, pp. 114-116.

56 Okladnikov, 1945-50, Part 2, pp. 40-58, plates 6 and 7.

57 See Chard, 1956b (based on Okladnikov, 1945-50, Part 2, pp. 126-131 and plate 20).

58 Described in Okladnikov, 1945-50, Part 2, pp. 109-121, 144-147, and plate 19; 1955, pp. 117-123.

stone-working took place at these sites, the aim being to produce blanks for various tool types (chiefly points and scrapers), a supply of which was carried on the long treks across the stoneless tundra following the movements of the game herds. River cobbles provided an ample supply of material (black siliceous slate), and the elevated bluffs afforded some respite from the summer plague of mosquitoes. Workshop sites of this nature are apparently unique for Siberia. All those farther south (e.g. in the Baikal region) show protracted occupation and produced finished artifacts.

As stated previously, remains as far west as the Taimyr Peninsula and as far east as the Kolyma River show close similarity to those of the Lena valley. Excavations at Khatanga[59] revealed a complex whose parallels lie primarily in the main level at Kullaty rather than on the lower Lena, as might be expected. Okladnikov's 1946 field work in the Kolyma valley has unfortunately not yet been published, but complexes analogous to the upper and lower levels at Uolba Lake are reported.[60]

Trans-Ural Region

The northern Urals are archaeologically unknown. On the other hand, the central and southern Urals have been the scene of extensive work in recent years, and a coherent picture is now beginning to emerge. Whereas formerly the Neolithic and most of the Bronze Age remains in the forested portion were lumped together under the label "Shigir culture,"[61] a more precise temporal arrangement is now possible. Following the system set forth in Raushenbakh's recent analysis,[62] we will limit the Shigir culture to certain undated but apparently early Neolithic materials, almost all from the famous Shigir peat bog (65 km north-northwest of Sverdlovsk). The documented remains will be termed the Gorbunovo culture, divisible into early, middle and late stages on the basis of the stratification in Gorbunovo peat bog (near Nizhnii Tagil). Discussion of the latter two stages will be postponed, as they fall within the Bronze Age. We may note, however, that the Gorbunovo culture, like the earlier Shigir, was throughout its span based on a hunting-fishing-gathering economy. Only toward the end of the late stage did stock raising make its appearance. Arguments for a primitive form of agriculture in the middle stage are not altogether convincing.

59 Described in Okladnikov, 1947a.

60 See Chard, 1956b. References to the Kolyma work appear in Okladnikov, 1947b, and 1955, pp. 123-124.

61 E.g. Dmitriev, 1951a, 1951b.

62 Raushenbakh, 1956.

Great quantities of prehistoric remains were recovered in former years from the large Shigir bog in the course of mining and peat-cutting activities. None of this material is properly documented. In addition to remains representing all three Gorbunovo stages (and still later cultures), there are distinctive artifact types totalling some 3000 specimens which are absent at other sites of these cultures and are thus presumed to represent a separate (Shigir) complex and an earlier horizon, whose type artifacts had already gone out of use by early Gorbunovo times.[63] The presumption is strengthened by the circumstance that the closest analogies to these forms seem to occur only in such early Neolithic sites as Nizhnee Veret'e in northern Russia, or even the Mesolithic Baltic site of Kunda. Most characteristic are the three types of bone arrowpoints: needle-shaped, side-bladed, and biconical ("Shigir type"); and the harpoons.[64] There are apparently no ceramic remains from the bog which could be attributed to this early stage; it is therefore assumed to be pre-ceramic. As a result of statistical studies based both on typology and the color of the bone artifacts, plus such limited data on provenience as exists, Raushenbakh believes it possible to distinguish an earlier and a later phase of the Shigir culture, the older artifacts being longer and more carefully made. Raushenbakh suggests a dating of around 4000 BC for the culture, but admits there is no basis for this. As a minimum, it probably dates at least to the first half of the 3rd millenium BC. On purely typological grounds, the undated Pegan burial in Kurgan *oblast* is also assigned by Raushenbakh to the Shigir culture.[65]

The early Gorbunovo culture is characterized particularly by certain types of pottery decoration. These include wavy linear design applied zonally with a four- or five-toothed comb stamp, usually in combination with comb-stamping;[66] rows of stabs with the tip of a narrow spatula;[67] various simple combinations of comb-stamp imprints combined with other elements;[68] and early forms of dentate rocker stamping. The earliest vessels are round-bottomed. The various tempering materials employed reflect local availability and lack chronological significance. Also characteristic of the stage are small round scrapers, leaf-shaped and tanged arrow-

63 Described in *idem*, pp. 86-115.

64 Illustrations: *idem*, fig. 22; Briusov, 1952, fig. 32.

65 Description in Sal'nikov, 1952b.

66 Illustrations: Raushenbakh, 1956, figs. 2 (4, 5), 4 (3, 5, 12).

67 Illustrations: *idem*, fig. 6 (9). This technique *(otstupaiushchaia lopatochka* in Russian) is sometimes termed "pseudo dentate" or "pseudo cord-marked." A similar trait occurs on wares at the Sperrings site in Finland.

68 According to Raushenbakh, the comb-stamping techniques of the Gorbunovo culture area surpass any others in variety and elaboration. This presumably refers mainly to the later stages.

points, antler picks, and harpoons,[69] and a few wooden objects (paddles, stake "idols").[70]

The oldest site of the early Gorbunovo stage in Raushenbakh's opinion is Strelka in Gorbunovo peat bog.[71] This evaluation rests on the greater depth of the remains here as compared with other sites in the bog, and the typologically older appearance of the material. Of interest is a wooden sled runner[72] said to be unlike any other from the Urals but having parallels in Finland. This is thought to have formed part of a single-runner hunting sled. Some microblades were found, but no trace of slotted tools. Pollen analysis indicates a climate which Raushenbakh identifies with the end of the Atlantic phase, assigning a date no later than 2500 BC.

Slightly later, typologically, are the related sites of Poludenka I (12 km west of Nizhnii Tagil)[73] and the lowest level at Shanaikha (on Isetskoe Lake, northwest of Sverdlovsk).[74] These are assigned to the end of the 3rd millenium BC. The youngest early Gorbunovo sites, on the same typological basis, are the lower level at the stratified Sixth Section site in Gorbunovo bog[75] and the very similar one at First Karas' Lake,[76] assigned to the beginning of the 2nd millenium BC. Stratigraphy, however, merely places the Sixth Section lower level chronologically somewhere between Strelka and the overlying middle horizon, which is dated to the 15th-13th centuries.[77] Farther south, near Miass in Cheliabinsk *oblast,* is the Chebarkul' site[78] which has been considered as a late manifestation of this early Gorbunovo culture, but which may quite possibly be even younger.

Certain parallels between the Ural cultures and the Kel'teminar of the Aral

69 Illustrations: *idem,* figs. 1 (12, 13), 2, 3.

70 *Idem,* fig. 1 (15, 16). The famous wooden carvings come from the succeeding middle stage at Gorbunovo. Examples are shown in Gimbutas, 1956, plate 43 (2, 3).

71 Discussed in Raushenbakh, 1956, pp. 11-15. Illustrations: figs. 1 (1-14), 2, 4 (1-6, 8-13), 5.

72 *Idem,* fig. 5 (6).

73 Raushenbakh, 1956, pp. 15-19, fig. 7 (with references). The original excavator (Bader) viewed the site as representing a single occupation and exaggerated the importance of "Andronovo" elements, according to Raushenbakh, who sees evidence for stratigraphy. Only the main complex here reflects early Gorbunovo. Later materials indicate occupation of the site until 1750-1500 BC.

74 *Idem,* pp. 19-21, figs. 6 (1-6). Again a mixed deposit, but with early sherds predominating in the lowest level.

75 *Idem,* pp. 21-25, figs. 1 (15-17), 3, 4 (7), 6 (7-10), 8 (1-9, 11).

76 *Idem,* pp. 25-26, fig. 8 (10).

77 Gimbutas, n.d. This authority would lower all of Raushenbakh's dates, placing Strelka c. 2000 BC and the lower level at Sixth Section possibly as late as the second quarter of the 2nd millenium.

78 Preliminary description in Kiparisova, 1955.

Sea region have previously led to the hypothesis that the former were an offshoot of the latter. Raushenbakh reviews the evidence[79] and concludes that it is more probable that they are coeval branches of the same basic tradition. She sees two fundamental ceramic complexes in the early Neolithic of European and Asiatic Russia: one with pit-comb ware ancestral to the Lialovo pottery of central Russia;[80] the other giving rise to the distinctive Ural and Kel'teminar comb wares.

Much less is known about the Neolithic in the forest-steppe and steppe zones of the Trans-Ural region.[81] Most of the sites in the former are blowouts in dunes along such rivers as the Miass and Iset', containing flint tools, blades and pottery. The wares are apparently quite similar to the Neolithic pottery of the forest zone just discussed, and are doubtless contemporary. A site below present water level in Lake Smolino near Cheliabinsk is regarded by Sal'nikov as the earliest on the basis of absence of pottery. Finds consisted of flint artifacts and a large quantity of chips. The site could only have been occupied during a dry period such as the Sub-Boreal; the latter seems rather too recent for a pre-ceramic complex in this area. It is not clear whether the alternative has been considered, namely a workshop of some sort.

Quite different culturally are the dune sites farther south along rivers on the steppe itself. Here, microliths are the most conspicuous feature. Pottery, which occurred in nearly all sites, is reported to be of the type found in kurgan burials of the earliest Pit-grave culture;[82] it is therefore concluded that both the microlithic dune sites and the kurgans were left by the same people. Thus, although the steppe and forest-steppe zones are thought to have shared a common economic basis (fishing) during the Neolithic, they seem to have belonged to separate culture areas from very early times.

Western Siberia

Very limited data derived from a few widely scattered points indicate that this vast region shared a common tradition with the Urals and the kindred Kel'teminar culture of the Aral Sea, which is not surprising since these areas merge so imperceptibly with one another that any boundaries are purely arbitrary. Though occasional influences seem to have penetrated westward from the Baikal region (e.g. lugged axes), the major flow of culture in this area was from west or south-

79 Raushenbakh, 1956, pp. 148-149.

80 Cf. Gimbutas, 1956, pp. 193-194.

81 For a summary, see Sal'nikov, 1951, pp. 96-100; 1952a, pp. 46-51.

82 This culture is discussed in Gimbutas, 1956, pp. 71-74, where it is dated c. 2000 BC. Kurgans of this stage were excavated in 1949-50 on the Trans-Ural steppe in the region of Magnitogorsk.

west towards the east, as far as the Yenisei. This cultural homogeneity over the unbroken expanses of western Siberia, Kazakhstan, and Trans-Uralia during the Neolithic foreshadows the comparable situation in the Bronze Age when the Andronovo culture dominated the scene from the Caspian to the Yenisei. In fact, not until the early Iron Age do distinctive local cultures seem to appear here.

Such dating as has been attempted for the west Siberian Neolithic rests entirely on the analogies to various Ural sites. We can safely say that the ceramic complexes are all contemporary with the early Gorbunovo stage of the Urals (latter part of 3rd and beginning of 2nd millenium BC). A more precise temporal ordering of individual sites has been proposed[83] but is open to criticism in its present form.

The earliest Neolithic in western Siberia appears to be represented by the non-ceramic (if not pre-ceramic) Andreev Lake I site near Tiumen, mentioned above.[84] There seems nothing comparable to this archaic-looking blade assemblage except the equally isolated Nizhne Adishchevo site in the Kama River basin west of the Urals — if we except a few undocumented finds. A guess-date of the 4th millenium BC has been suggested by Chernetsov.

Neolithic sites with pottery have also been found at Andreev Lake (Kozlova Pereima and "VIII Point"),[85] as well as on the Severnaia Sosva River, a western tributary of the lower Ob (Ches-tyi-iag, Khulium-sunt, Sortyn'ia I),[86] and on the Irtysh at Ekaterininka near Tara (north of Omsk).[87]

The pottery displays familiar Ural elements in different proportions, varying from site to site, and some of these variations undoubtedly have chronological significance. Decoration is over the entire surface with comb-stamping predominant — sometimes arranged in horizontal or vertical bands, sometimes forming geometric designs (e.g. chevrons, rhombic net). Dentate rocker stamping occasionally appears. Spatula stabbing and linear incision (especially wavy lines and hatched zones) were also important. Closest analogies are found at the Ural sites of Strelka, Poludenka I, and Borovoe Ozero I.[88]

Two apparently Neolithic burial sites should also be mentioned: Ust'-Kurenga near Tara,[89] and Kuznetsk opposite Stalinsk on the upper Tom River.[90] Pottery

83 See table in Chernetsov, 1953, p. 36.
84 *Idem*, pp. 25-27.
85 *Idem*, pp. 26, 28-31 (sherds illustrated).
86 *Idem*, pp. 12-24 (illustrations).
87 *Idem*, pp. 31-34 (illustrations).
88 The latter site is located in the Kama basin. See Gimbutas, 1956, pp. 204-205.
89 Chernetsov, 1953, p. 34, plates 12 and 13.
90 Chernyshev, 1953.

was absent in the graves (or not saved, in the former case), and there is no other basis for dating. The Kuznetsk finds included a laurel-leaf point 35 cm long (unique in point of size) and small polished axes of green nephrite. The nephrite is thought to have been traded from the Baikal area, although the axes are of local type. The predominant artifact was a type of point whose analogies lie in the metal-age Tomsk cemetery.[91] This fact plus certain general similarities in the location and arrangement of the two sites has led to the view that the Kuznetsk burials represent the early ancestors of the Tomsk people. A Neolithic level underlying the adjacent Maiakovoe *gorodishche* at Kuznetsk has also been reported, but details are lacking.

In the forest-steppe zone, a number of late Neolithic sites were uncovered in 1952-1953 on the upper Ob between Novosibirsk and Barnaul. The pottery is basically similar to that just discussed, but on the basis of differing details the sites can be classified into three groups which are thought to have chronological significance. Type 1 sites (Kiprino, Irmen' II) show resemblances to the lower level at Sixth Section and also to the earliest materials from the Tomsk cemetery; Type 2 (Irba) is closer to the middle level at Gorbunovo. A site at Ordynskoe appears transitional between Type 2 and the Bronze Age Andronovo culture, thus corroborating the chronological implications somewhat. Type 3 (Krotovo VII) is still floating in time. There is no stratigraphic or other local evidence for the relative chronology of these Neolithic sites, though it should be noted that in several cases they are overlain by metal age remains. However, it is evident that all the upper Ob materials fall well within the 2nd millenium BC.[92]

Yenisei Valley – Altai Mountains

The lower course of the Yenisei River is virtually unknown archaeologically. From Krasnoyarsk south, on the other hand, we have a curious situation. The metal periods here have been more thoroughly studied than anywhere else in Siberia, and it is also one of the great centers of Palaeolithic activity; but less is known of the Neolithic than in any of our other regions. There have been surface finds of apparently Neolithic material, but only a few scattered remains *in situ*. The data are not only fragmentary, inadequately published, and often unsatisfactory, but they have been subjected to conflicting interpretations.

The earliest datable remains are surface finds of stone fish effigies similar to

91 The earliest group of burials in the Tomsk cemetery was originally assigned to the Neolithic (Komarova, 1952, pp. 10-16, 49), but is more probably very early Bronze Age.

92 For a preliminary account of these sites, see Komarova, 1956. Fig. 40 shows materials from Type 1 sites; fig. 41, Type 2; fig. 42 (1-17), Type 3.

those of the Serovo period in the Baikal area. These and other materials suggest that influences from the latter predominated in the early stages of the Yenisei Neolithic. Later, it is thought, the flow was reversed, and at least the Krasnoyarsk area entered into the Ural-West Siberian culture province. Contacts with the Baikal region evidently continued, however, throughout the Neolithic, the later stages of which are contemporary with metal horizons on the adjacent steppe. It is probably safe to characterize the Yenisei valley as a transitional zone whose prehistory will prove to have been very complex.[93]

Farther south, in the Minusinsk Basin and the Altai Mountains, we find after 2000 BC representatives of the probably intrusive Afanasievo group of cultures with their obvious southwestern affinities. The latter were of European racial type, whereas the available data at least suggest that the Krasnoyarsk area was inhabited by Mongoloids.[94] The Altai seems to have been oriented toward the steppe world even in earlier, pre-Afanasievo times.[95]

Afanasievo has traditionally been included in the metal culture sequence and treated as very early Bronze Age; it will therefore be discussed in that connection. Actually, in most of its manifestations it is a copper culture; its earliest stages, however, may well represent a true Neolithic.[96]

Amur Region

Probably the most distinctive of the Siberian areas is that embracing the basin of the Amur River and the adjacent Maritime Province and Sakhalin. Never affected by glacial conditions, it formed a refuge area for Tertiary flora and thus offers a quite different natural environment. Furthermore, the great annual fish runs provide a unique basis for economic life with a consequent characteristic pattern in human occupation and culture. In contrast to other regions, the Amur Neolithic settlements are permanent and often sizable communities of closely-spaced pit dwellings, the latter sometimes reaching 90 meters in circumference. The individuality of the cultural inventory in particular places the Amur region in a special position. It is viewed both as an intrusive wedge of southern culture

93 The available data on the Yenisei Neolithic, published and unpublished, has recently been analyzed and discussed in some detail by Okladnikov (1957), with illustrations and references. See also the brief summary in Kiselev's definitive volume on southern Siberia (1951), pp. 14, 17-20, 65-66. To these should be added the burial near Bateni whose artifacts of moose bone and antler have no known parallels (Griaznov, 1953).

94 For the racial affinities, see Levin, 1951, pp. 477-479.

95 For details of the few Altai finds, see Jettmar, 1951, pp. 137-139.

96 The most accessible sources on the Afanasievo (c. 2000-1650 BC) are Gaul, 1943; Jettmar, 1951, pp. 139-141; and Kiselev, 1951, pp. 23-44.

whose affinities lie along the east Asiatic coast and adjacent islands, and as one of the two major cultural hearths in Siberia (the other being the taiga zone).

The Amur Neolithic is assigned by Okladnikov to the 3rd and 2nd millenia BC, which appears reasonable, although the basis is not stated.

The informational situation here is the least satisfactory of any area in Siberia, in that while a considerable amount of field work has been done, reports are as yet limited almost entirely to brief or superficial summaries,[97] making it extremely difficult to marshal any concrete data on which to base an appraisal. This is all the more regrettable since the area gives promise of holding the key to many problems of the greatest interest to students of the New World in general and the North Pacific in particular.

The earliest full Neolithic sites are considered to be those at Suchu Island (opposite Mariinsk) and Kuinga (near Nikolaevsk at the mouth of the Amur). The attribution of antiquity appears based on the fact that the large, deep house pits are completely filled in and unrecognizable on the surface, in contrast to other settlements with remains of Neolithic type. Features identified in these dwellings included post holes along the walls and in the center, a hearth and storage pits. Bone seems not to have been preserved, as the absence of both faunal remains and artifacts is mentioned. Stone and ceramic finds are, however, abundant. The pottery is all flat-bottomed, in conspicuous contrast to the round or pointed base typical elsewhere in Neolithic Siberia, and is richly decorated with incised linear, pit and comb-punctuate designs, usually arranged in horizontal bands. There are also examples of monochrome painting. The ornamental style is curvilinear, featuring spirals and meanders, rather than simple rectilinear as in, for instance, the Baikal region.[98] Basic similarities are seen with the far more complex Yangshao motifs. A very characteristic element of the stone inventory (then as later) are the clubs for despatching large fish which could not otherwise be coped with in small canoes. Also noted are polished axes and adzes, flint knives, and scrapers.

Also on Suchu Island are large settlements assigned to a somewhat later period — apparently marked by visible depressions. The inventory is not specified. The earliest Neolithic sites in the Maritime Province (e.g. at the mouth of the Tetiukhe River, or at Osinovka in the interior) seem to be correlated with this stage, pre-

97 E.g. Okladnikov, 1954a, pp. 236-253; *Ocherki Istorii SSSR*, pp. 121-123; Okladnikov, 1936 (lower Amur). These sources are not always consistent. The only detailed reports to date are Okladnikov, 1956, on the shell-mound culture, and Andreev, 1957, on the 16th-12th centuries BC settlement at Zaisanovka. (The latter was not received in time for discussion in the text.)

98 Illustrations of designs or vessels from Suchu Island appear in Okladnikov, 1954a, p. 241 (bottom) and p. 245 (top).

sumably on the basis of shared traits. The general culture is stated to have much in common with that on the Amur. Specifically noted is a rhombic mesh decoration on vessel rims.[99] Clay spindle whorls indicate wide use of vegetable fibers. Large pots (40-50 cm high) are reported on the Amur — presumably used for storage. One deduces that most or all of the features noted for the earliest stage continue in use.

The late Amur Neolithic is represented by the lowest level at Bol'shoi Dural (near Nizhne Tambovskoe)[100] and related sites, with which are reportedly associated wedge-shaped stone axes, slate knives and arrowpoints, stone lamps, and cylindrical beads of white stone. Pottery is said to include vessels with high necks, "braided" decoration, and polished ware painted red. Details (and illustrations) are lacking, except that the presence of check-stamped ware at Bol'shoi Dural is specifically mentioned. A date around the end of the 2nd millenium BC is suggested by Okladnikov; the grounds for this are not stated.

The present status of the three-fold subdivision proposed by Okladnikov in 1936 for the lower Amur Neolithic[101] is not clear. No reference to it has been noted in subsequent literature. The arrangement leaned heavily on typological considerations. Specific sites were not identified, making precise correlation with the more recent notes above difficult. Judging by traits mentioned, both the early and later phases at Suchu Island would fall into stage "A" of this scheme, while stage "B" would be represented by the late sites (bottom level at Bol'shoi Dural, etc.). No further data are available on stage "C" sites, which would perhaps correspond temporally to the shell-heap culture of the Pacific coast (*infra*).

Numerous sites in the Vladivostok area, all located on the sea and characterized by large shell middens, contain an extremely interesting culture assigned by Okladnikov (on convincing comparative evidence) to the period embracing the last half of the 2nd and the 1st millenium BC.[102]

A sharp break with the preceding periods is reflected in these sites. The many parallels with northern China suggest the possibility of an actual migration from the south. Typical local Neolithic stone types almost completely disappear, as do the pressure-flaking and blade techniques in general. This is preponderantly a polished slate culture. Most typical artifacts are large tanged points or knife blades 20-30 cm long; there are also smaller points suitable for arrows, darts or

99 Illustrations in Okladnikov, 1954a, p. 242 (center, from the Amur; reconstructed design above) and p. 243 (from Tetiukhe River).

100 Okladnikov, 1951.

101 An English summary will be found in Field and Prostov, 1937, pp. 480-482.

102 Okladnikov, 1956 (numerous illustrations, especially of pottery).

possibly harpoons. Especially striking are the slate imitations of Altai and Chinese metal weapons. [103] Certain perforated triangular points which find their closest analogy in old Eskimo sites are probably tips for harpoons. Evidence for agriculture is seen in the grinding slabs and tools resembling north Chinese sickles. Adze types also have predominantly southern affinities. Various semiprecious stones were used for the manufacture of ornaments, including greenish-white nephrite. Especially typical are the large, well-polished cylindrical beads of dark green jasper-like stone, analogous to a type popular in Japan and Korea. Bone artifacts are inconspicuous, being mostly rather crude points, with a few compound fish hooks reported. The pottery also differs markedly from the earlier wares of the region. No whole vessels have been recovered, but bases are flat, massive, and often narrow; profiles pronouncedly convex in the upper portion, sometimes approximating globular form; rims often curve outward. Biconical goblets are a conspicuous special form. Surfaces are commonly well polished. Certain thin sherds show a layer of red pigment. Decoration is confined to the upper part of the vessels; characteristic techniques are applique fillets and linear incision, sometimes combined with punctations. Very typical features are applied lugs with horizontal perforation or applied ornamental bosses. Most commonly, several parallel lines or bands encircle the vessel just below the rim; sometimes these are connected by lines or other elements. Also frequent are scattered geometric figures. The most striking and well-executed design is the meander. In contrast to the older curvilinear style, that of the shell heaps could be labelled rectilinear-geometric. Of interest are incised representations of leaf skeletons on the bases of certain vessels, which find precise analogy in Japan.

The identification of all fish remains in the middens as ocean species is the main argument for characterizing this as a full-fledged maritime culture. Okladnikov postulates the necessity for sea-going boats (no trace) and toggle harpoons (little specific evidence). In view of the incidence of the latter in Japanese middens, the dearth of comparable material here is very puzzling.

No significant information is yet available on the Russian excavations in Sakhalin. The results of Japanese work in the southern half (former Karafuto) will be summarized in a separate publication. In the present state of our knowledge it is not possible to correlate them with any of the Russian materials.

North Pacific Region

The remaining Neolithic area comprises the coastal zone of northeastern Siberia from the Amur basin to Bering Strait (including the entire Kamchatka

103 *Idem*, figs. 17 and 18.

peninsula and the northern Kurile Islands), plus the arctic shore west to the Kolyma River. Its southern limits on the mainland cannot be precisely defined, but might for our purposes be arbitrarily placed half way between the Amur mouth and Magadan. The latter sector is still unexplored archaeologically. The southern Kuriles are excluded since they constitute a cultural annex of Hokkaido and had no direct contacts with the Siberian mainland. The hinterland of this entire area, insofar as it is known at all archaeologically, belongs to the Lena region, or seems to show closer affinity to the Lena than to the neighboring coastal cultures. This is the case even in the Chukchi Peninsula.[104]

Lest such a "culture area" strike the reader as a dubious or artificial construct, one need only point to its counterparts in North America — the Northwest Coast and the zone of Eskimo occupation. The factors which give it cohesion and reality are both ecological and historical. With the sole exception of a small area on the Yamal Peninsula, it is the only part of northern Siberia which offers a suitable environment for maritime cultures. Sea mammal hunting is characteristic here. Whether it is the predominant economic base in any given locality depends on the presence or absence of an annual fish run, which offers a secure livelihood in most of the southern portion. The area possesses a certain historical unity as the homeland of the Chukchi-Koryak-Kamchadal linguistic stock, though this would include portions of the hinterland as well. More significantly, it coincides with the proposed distribution of the early Eskimoid substratum which, it has been suggested, underlies the historic cultures of northeastern Asia.[105] Archaeologically, the area is clearly distinguished as the only part of Siberia in which the stone age lasted until European contact. As in the American Eskimo area, cultural links here tended to run for immense distances along the coast, and contacts with the immediately adjacent interior were typically minimal. It should be noted that the southern part of this North Pacific coastal zone is effectively isolated from interior Siberia by mountain barriers which must have played a major role in channeling movements along a north-south axis.

As compared with the rest of Siberia, the known archaeological remains in the North Pacific region are relatively recent; some are proto-historic, and the oldest datable culture probably does not much exceed the limits of the Christian era ("Uelen-Okvik" stage in the Bering Strait area).

No part of the Old World lies closer to the New, or could have played a more significant part in the movement of peoples and cultural influences between the continents. Inevitably, we regret the blank spots in so crucial an area; yet consider-

104 The interior Chukchi Peninsula sites are summarized in Chard, 1955a, and Krader, 1952.
105 See Chard, n.d. (b).

ing its inaccessibility, our knowledge of it compares favorably with much of the rest of northern and eastern Asia. Furthermore, the amount of material available in English is unusually large.

Most closely linked with the New World are the Eskimo sites on the shores of the Chukchi Peninsula.[106] All stages of the original Bering Sea sequence are duplicated here, and the oldest (Okvik) is better represented and thought to have centered on the Asiatic side, which may also have witnessed its earliest beginnings. No new Eskimo phases or complexes have as yet been located in Siberia. It should also be noted that there is no culture here comparable to Ipiutak. Eskimo remains are distributed on the arctic coast from the Bear Islands (off the Kolyma River mouth) to Bering Strait; south of the latter their occupation was more limited and seems to have extended only as far as the north shore of Anadyr Gulf. Beyond this area, characteristic traits of the classic Eskimo cultures apparently disappear. A site at the mouth of the Anadyr River contained a blend of Eskimoid and more southerly elements.[107]

Proceeding south along the Pacific coast, the next significant body of data come from the Kamchatka Peninsula. These have been conveniently summarized and analyzed by Quimby, who cites the essential sources.[108] His coverage extends to the Nayakhan area at the northeast corner of the Okhotsk Sea. Quimby concludes that most of the known archaeological remains on the peninsula can be classified into a northwestern and a southern group, probably reflecting respectively the pre-contact cultures of the Koryak and Kamchadal. He sees the latter as oriented southward towards the Ainu and Japan. Some complexes are placed as early as the 11th century AD, following Jochelson's erroneous dating.

Quimby's views require certain modifications, though basically sound in most respects. One cannot, for example, uniformly equate the southern complexes with ancestral Kamchadal. There is every reason to regard the Kuril Lake sites in the extreme south as a proto-historic (probably 17th century) occupation by the Kurile Ainu.[109] The marked Ainu elements elsewhere are contemporary and concentrated on the southeastern coast — the area most open to contacts with these sea rovers.[110] Thus, the Ainu complexion of the southern complexes, though conspicuous in some cases, is a recent overlay rather than the basic orientation that Quimby

106 Detailed summary in Chard, 1955b.

107 Chard, 1957a.

108 Quimby, 1947. Additional data will be found in Antropova, 1949; Nakayama, 1934; and Rudenko, 1948. These do not alter the picture presented by Quimby.

109 See Chard, 1956a.

110 In particular, the pottery type which Quimby calls "Kuril Lake Plain" with inside lugs is simply the historic Naiji ware of northern Japan.

implies. There is no basis for ascribing even moderate antiquity to the Kamchatka sites, and most of them are manifestly recent. This is not to imply that older material is not present, as it will undoubtedly prove to be; but simply that excavations so far have been limited almost entirely to the most conspicuous house pits.

Discussions of Kamchatka have also overlooked the fact that we actually have very little archaeological material from the historic Kamchadal territory, if one subtracts the southeastern coastal sites which were open to outside maritime influence. For instance, the valley of the Kamchatka River, which was the Kamchadal heartland, is almost unknown archaeologically. I do not think that we are in a position to define with any confidence what the ancestral Kamchadal complex might be.[111]

The most extensively studied area in the North Pacific region, the northern Kurile Islands, will be passed over since a recent summary and discussion is readily available elsewhere.[112] It is unlikely that any of the known prehistoric remains here antedates 1000 AD.

The only remaining area where excavations have been carried out is in the vicinity of Magadan on the north coast of the Okhotsk Sea. More or less extensive test digging was carried out here in 1946 by Okladnikov, and earlier by Levin and others; but only brief notes have appeared in print.[113] Most of the sites in this area are considered to represent ancestral Koryak culture, and consist of large semi-subterranean houses and middens of shells and sea-mammal bones, usually situated in coves near good fishing streams or on islands. A markedly maritime culture is indicated. Finds include a variety of harpoons, remains of reinforced bows and bone slat armor, almond-shaped stone adzes with lenticular section (having affinities with the Amur region), and round-bottom paraboloid pottery with net or check-stamp impressions, sometimes encircled by an applique band. Further details are lacking, but the culture is seen as a link between Ainu and Eskimo as well as between interior Siberia and interior North America.

Older sites in the Magadan area include a number of stone workshops and the stratified settlement on Ol'skii Island where there is no evidence of underground dwellings. In the lower level here were found distinctive large arrowpoints of Neolithic type.

111 It is possible that the Kamchadal lacked pottery, except in border areas where it was borrowed from neighbors. See Chard, n.d. (a), pp. 133-136.

112 Chard, 1956a.

113 Okladnikov, 1947b. Also Leningrad University *Uchenye Zapiski*, no. 115, p. 35. Stone implements from the Kanchalan site (illustrated in Chard, 1957a) are said to resemble Magadan types.

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THE KERESAN COMPONENT OF SOUTHWESTERN PUEBLO CULTURE[1]

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WITHIN the generally recognized confines of the Southwestern culture area, the Puebloan peoples have for many centuries occupied a relatively central position in terms of topography and, perhaps even more, in terms of cultural intensity or vigor. This nucleus, since pre-Spanish times, has extended from the Hopi mesas in the west to the present-day Pueblo of Taos, the former Pueblo of Pecos, and the extinct Piro pueblos, respectively located along the opposite periphery east of the Rio Grande. Within this nucleus, the Keresans in turn, have occupied a central location which has tended to make these tribes transitional between Hopi and Zuñi in the west and the Tanoan (Tewa, Tiwa, and Towa) and Piro villages of the east.

In physical type, there are few data which can be used to differentiate the members of one tribe from another. Long centuries of genetic mixtures[2] have served to obscure whatever distinguishing features there may have been in former times. In contrast, the Keresan language seems to be best regarded as an unaffiliated and relatively restricted stock within the Puebloan Southwest.[3]

The present paper is concerned only with the historic and contemporary periods. Shortage of space and an overly great dependence upon conjecture rather than demonstrated stratigraphic sequences have combined to postpone consideration of the prehistoric period until some later time.[4]

1 This article is based upon a paper presented in December, 1955, to a joint seminar on Southwestern Anthropology held at the Chicago Museum of Natural History under the sponsorship of the University of Chicago and Northwestern University departments of Anthropology. The writer wishes to thank Dr Fred Eggan for his helpful reading of an earlier draft of the present paper.

2 Historical documentation, as cited by Alfred B. Thomas *(Forgotten Frontiers,* Norman, Oklahoma, 1932, p. 230), to name but one example, reveals movements from eastern villages to the western towns, especially Hopi, during the Pueblo Revolt, 1680-1692. Reversals of this trend, as in the wake of the 1777-1779 drouth, found Hopi and Zuñi refugees coming into the Rio Grande villages.

3 Harry Hoijer, in his "Introduction" *(Linguistic Structures of Native America,* Viking Fund Publications in Anthropology, no. 6, New York, 1946, pp. 9-29), endorsed the classification of Keresan by Powell rather than that by Sapir as the latter was "not supported by any published data." More recently, Stanley Newman (personal correspondence, October 23, 1956) confirmed this view.

4 Stratigraphic tests were made at a number of sites on Rancho Cañada, immediately north of the Cochiti Reservation, in 1957. (This work was made possible through the coöperation of the

Of the Keresan villages themselves, Acoma and Laguna are commonly termed "Western Keresan," while Zia, Santa Ana, San Felipe, Santo Domingo, and Cochiti are included under the heading, "Eastern Keresan." The discussion presented here represents an attempt to collect, order, and evaluate the more significant data pertinent to the reconstruction of Keresan culture history. At best, this effort can be appraised as little more than hypothetical in many respects. Its principal value will come from the correlation of old and new data and, subsequently, from the concomitant disclosure of specific problems upon which additional research is needed. Ultimately, it is hoped that this hypothesis may be restated in terms of a relatively complete and conclusive reconstruction of at least the historic phases of Keresan culture within the context of Southwestern Pueblo culture history.

ECONOMICS

In economic life, the Keresan tribes show little differentiation among themselves or in comparison with other Puebloan groups. The Eastern Keresans have emphasized agriculture rather than stockraising, therein paralleling other Rio Grande Puebloans. The Western Keresans, while also predominantly farmers like the Zuñi and Hopi, have placed greater stress upon herding, especially of sheep. As at Zuñi and Hopi, this development has been in part correlated with the more extensive range lands available because of less populous Spanish and other European settlement.

Prehistoric agriculture based upon a combination of dry farming and rudimentary ditch systems as well as flood water techniques continued in historic times. However, during the latter period, there has been increased dependence upon ditch irrigation — reflecting both improved tools and, in time, machinery as well as progressive desiccation.

Puebloan ditch systems have been constructed, maintained, and used communally under direction of a ditch boss, or water boss, or *mayordomo*. The origin of this particular office is obscure. While possibly a Spanish innovation, this role undoubtedly would have been necessary in the aboriginal scene wherever a communal ditch system was used. The precise status and function of this officer vary from tribe to tribe; in general, he is highly important. White found at Santa Ana that he is a distinct official with both secular and ceremonial significance. He customarily manages the operations of the irrigation system, but in the event of con-

Museum and Graduate Council of Southern Illinois University, the Museum of New Mexico, and Mr. James W. Young.) Plans are now under way to intensify this work and also to expand it to the reservation. Ultimately, it is hoped that stratigraphic testing at least will be allowed within the limits of the present-day Pueblo of Cochiti.

troversy, he normally turns to the council for a decision. Ritually, the meal he uses is made of white beans; this constitutes the only deviation from cornmeal that White had encountered in such circumstances.[5] At Cochiti, in contrast, the role of the ditch boss is performed by the governor, these duties merely being added to his other responsibilities.

Economic activities supplementing agriculture reveal considerable similarity from one village to another, Keresan and non-Keresan alike. Certain local specialties are, or at least have recently been, extant. Zia pottery, for example (and Acoma wares, until quite recent times), is outstanding and is used both locally and at other pueblos such as Santo Domingo and Cochiti where pottery-making also continues but is increasingly aimed at the tourist trade. Drum-making, both of the large double-headed ceremonial drums and the generally smaller tourist drums, continues to be a Cochiti specialty.

In contrast, the weaving of baskets is confined, with rare exceptions, to the twilled, loosely woven baskets used for such purposes as washing grain. Other forms are acquired from non-Keresans. Similarly, the weaving of *mantas,* sashes, and blankets is seldom practiced — such items commonly being obtained from other tribes.

Hunting and gathering activities have declined in recent decades, particularly under the stress of outside (non-Keresan and, for the most part, non-Indian) hunters who have been steadily encroaching upon the traditional grounds. The increasing availability of commercial foodstuffs has served to diminish the incentives formerly attached to hunting and gathering. As one might expect, the greater decline in these activities has occurred thus far in the eastern villages although exceptions, in individual instances, may be found in both the east and west. Hunting and, to a greater extent, gathering seem to be engaged in particularly during the growing season when families occupy small *ranchitos,* or farm houses, adjacent to the fields. Here, the possibilities of obtaining commercial produce from the trading posts or stores are reduced, and the native food plants and other materials are more conveniently available.

While anthropologists have quite consistently characterized the Puebloan peoples as overwhelmingly agricultural, the degree of this preponderance may well be questioned. The dominance of agriculture in the general economic picture cannot be seriously challenged; however, it is hardly realistic to relegate the combined activities of hunting and gathering to comparative insignificance. In his *New Ma-*

5 Leslie A. White, *The Pueblo of Santa Ana, New Mexico* (Memoirs, American Anthropological Association, no. 60, Menasha, 1942), pp. 105-106.

terial from Acoma, White recorded an account of an 1887 antelope hunt during which seventy-four hunters killed 744 antelope in one day.[6]

While this incident may have been quite exceptional, it does demonstrate the potentialities involved, at least formerly, in hunting. With such possibilities, it is only reasonable to assume that an appreciable effort, in relation to any year's total work schedule, was expended on similar or, cumulatively, on smaller but more frequent expeditions — many of which undoubtedly attained less satisfactory results. Data of this type are difficult to gather from archaeological sources and are rarely mentioned in historical documents; nevertheless, in the instances which have been recorded, valuable perspective is provided for the appraisal of economic, or other, activities.

VILLAGE PLANS AND ARCHITECTURAL FEATURES

Village layout shows little differentiation within the group or in comparison with non-Keresan towns.

Of the contemporary village sites, Acoma, the most divergent, has undoubtedly been influenced by its unique mesa-top location. Nevertheless, the parallel lines of multiple-storied, terraced houseblocks can be duplicated elsewhere, as, for example, at Santo Domingo, especially as of several decades ago. The newer colonies of Acoma at Acomita and McCarty's, however, approximate the more usual Keresan (and non-Keresan) pattern of increasingly scattered, one-storied family units commonly surrounded by yard areas.[7]

Virtually every Pueblo Indian village has at least one plaza which serves as the center of many activities, especially as the site of frequent ceremonials, either independent of or in conjunction with the Roman Catholic calendar of Feast Days. (This blending of native religious beliefs and practices constitutes another manifestation of the policy of "superposition," commented upon by Montgomery, Smith and Brew for various archaeological sites of the Southwest and of Mexico.[8])

However, the precise nature of these plazas varies considerably from village to village, and even within single villages, so that the stranger may have difficulty in

6 Leslie A. White, *New Material from Acoma* (Bulletin, Bureau of American Ethnology, no. 136, pp. 305-359, Washington, 1943), pp. 335-337.

7 For individual village plans, see Stanley A. Stubbs, *A Bird's-Eye View of the Pueblos* (Norman, Oklahoma, 1950).

8 Ross Montgomery, Watson Smith, and John Otis Brew, *Franciscan Awatobi: the Excavation and Conjectural Reconstruction of a 17th-century Spanish Mission Establishment at a Hopi Indian Town in Northeastern Arizona* (Papers, Peabody Museum, Harvard University, vol. 36, Cambridge, 1949) pp. 134-137, Appendix D. (In a recent paper, *Some Rules of Directed Culture Change Under Roman Catholicism* [American Anthropologist, vol. 58, pp. 721-731, Menasha, 1956] M. D. W. Jeffreys reveals such philosophies as dating back into the early centuries after Christ.)

some instances in identifying a plaza unless unusual events are occurring there at the time of his visit. Among the Keresans, a rather well defined plaza, set apart from the mission church building and *Campo Santo,* is present in Cochiti, San Felipe, Santa Ana, Zia, and Laguna. The plaza in both Santo Domingo and Acoma is hardly distinguishable from other principal streets. However, in none of these villages is there any confusion in the minds of the residents as to the location of "the plaza."[9]

Every Keresan village has a Roman Catholic mission church, a feature they share with all other eastern Pueblo tribes although not with the western villages. In numerous instances, ceremonials are initially performed before the church, just outside the *Campo Santo,* before the major portion of the proceedings is continued in the plaza. It is perhaps noteworthy that all of the mission buildings have their main entrances oriented eastward except for Zia which is more nearly northeast and Santo Domingo which reverses the general pattern by facing westward.

Keresan kivas, traditional strongholds of conservative, esoteric native religion, are relatively similar with the notable exception of the western villages of Laguna and Acoma. Laguna has no kivas; this is, however, a relatively recent phenomenon, and one which was a part of the assumption of control by the progressive element just prior to 1880. As a result of this development, members of the conservative faction withdrew from the pueblo and, for the most part, settled at Isleta.[10]

Four unique features characterize the kivas of Acoma when compared with those of other Keresan tribes. One is the multiple kiva system, Acoma having seven in contrast to the eastern Keresan villages where there are but two in each. (This statement is valid except for Zia where the second kiva was burned on the evening of August 15, Feast Day, in 1947, as one manifestation of a bitter factional dispute within the pueblo.) The second divergence is the presence at Acoma of rectangular kivas whereas elsewhere Keresan kivas are round. Third, Acoma stands alone among the Keresans in its practice of incorporating the kiva within the surrounding house block to the extent of at least one common wall. Elsewhere, these structures are built as isolated units. Finally, the Acoma kivas deviate from those of other Keresans in that access to the roof and inside of the structure is gained either by a ladder or by crossing over directly from an adjacent roof. Elsewhere, solid stairways of timber and adobe provide access. These stairways vary in location

9 While completely in sympathy with the attempt to reconstruct Puebloan culture history as in the recent paper, "Types of Village-Plan Layouts in the Southwest," by Erik K. Reed *(Prehistoric Settlement Patterns in the New World,* Viking Fund Publications in Anthropology, no. 23, pp. 11-17, New York, 1956), the writer finds it difficult to agree with the classifications proposed for the Keresan pueblos.

10 Elsie Clews Parsons, *The Laguna Migration to Isleta* (American Anthropologist, vol. 30, pp. 602-613, Menasha, 1928) and *Pueblo Indian Religion* (Chicago, 1939), pp. 888-889.

from southwest to due east, convenience seemingly being the prime factor involved.

Similarities in kiva features among the Keresans are seen in such characteristics as being essentially above ground level in all instances and having the rectangular firebox directly under the roof hatchway which is located near the southern wall. The hatchway is of similar dimensions as the box, and is oriented on a north-south axis. The only exception to this practice is possibly at Acoma where the northernmost kiva appears to have this hatchway close to the north wall.[11]

Keresan kiva features, in their association with social and, especially, with religious aspects of these cultures, are interesting in their variability and for the ramifications that this situation has in terms of Keresan and non-Keresan Puebloan culture history. The general dichotomy between Acoma in the west and the several Rio Grande villages in the east is not only intriguing but obviously of considerable significance.

Acoma's multiple kiva system bears striking resemblance to the pattern of both Zuñi and Hopi — in other words, this is a western complex. The rectangular floor plan and the inclusion of the kiva within the house blocks amplify this similarity. Rectangular kivas, for the most part detached, occur also at Jemez and most Tewa villages. Hawley has advanced the highly plausible thesis that Puebloan kivas are closely associated with the organizational details of the ka'tsĭna cult as they occur from village to village. Her hypothesis is substantiated in the majority of the Pueblos, but there are some which do not fit, at least as of the present time or during recent decades. She refers to six kivas at Acoma;[12] Stubbs maps seven.[13] White's discussion provides some details.

> . . . The term k'aatc at Acoma is used to designate the five chambers of the five kachina groups, and also for Mauharots, the "head estufa" (the chamber of the cacique and the Antelope clan), and the chamber of the Fire society. There are seven chambers, then, at Acoma called k'aatc. I feel that there "should be" six kachina chambers at Acoma instead of five; this would resemble the six kivas at Zuñi. Whether the six kivas reported by Bandelier and Mindeleff imply six kachina chambers or not is an important question, the solution of which would be of great moment.[14]

Ten years later, White, in a footnote to Stirling's discussion of the Acoma origin myth,[15] commented:

11 See Stubbs, *Bird's-Eye View*, p. 89.

12 Florence M. Hawley, *Big Kivas, Little Kivas, and Moiety Houses in Historical Reconstruction* (Southwestern Journal of Anthropology, vol. 6, pp. 286-302, Albuquerque, 1950).

13 Stubbs, *Bird's-Eye View*, p. 89.

14 Leslie A. White, *The Acoma Indians* (47th Annual Report, Bureau of American Ethnology, pp. 17-192, Washington, 1932), pp. 30-31.

15 M. W. Stirling, *Origin Myth of Acoma* (Bulletin, Bureau of American Ethnology, no. 135, Washington, 1942).

. . . it seems reasonable to include Mauharots as one of the six kivas associated with the katsina cult. The Fire society chamber, on the other hand, belongs to an entirely different cult and organization. Thus it seems justifiable to say that "Acoma has six kivas." . . .[16]

As Hawley noted,[17] it is interesting that both Acoma and Santa Ana have five ka'tsĭna groups; however, the fact that there are but two kivas at Santa Ana (and no indication of additional kivas for any period in the past is known) tends to weaken her suggestion that the number of kivas and of ka'tsĭna groups is everywhere the same.

Hawley, Parsons, Stirling, and White have all noted the presence of the foot drum at Acoma and its occurrence also at Zuñi and Hopi; at present, there is no known reference to a foot drum in any other Keresan kiva. At Cochiti, it was specifically denied by several informants.

Further related points, briefly noted, include the designation "k'aatc" for a kiva by the Acoma.[18] Stirling was told that the term "mauharo" was the ceremonial designation while "k'a'-'atc" was the ordinary word. "Kai" was given as the word for house.

When they began to build the first kiva, Iatuku told Oak man that it must be done in a certain way. Then she told him just how it was to be done. The whole kiva was to represent Shipapu, the place of emergence, though in ceremonial language it is called mauharo kai (the dark underworld where the Sisters were found; Shipapu is the upper part of the place of emergence where there was some light).[19]

At Cochiti, the kiva is known as "chik'ya" while the plaza, scene of most outdoor dancing, is referred to as "k'a'atch." It is also noteworthy that Stirling was told that the Acoma kivas were at first round, but that later they were changed to their present square form.[20] Whether this represents anything more significant than rationalization is difficult to judge at this time.

Cochiti informants, when queried as to the location of the small floor hole, or pit, or "shipapu," replied that "the whole kiva is shĭ'papu," thus seeming to cor-

16 Leslie A. White, Notes (Bulletin, Bureau of American Ethnology, no. 135, Washington, 1942), p. 45 fn. While White felt it was "justifiable" to speak of six kivas at Acoma, having earlier commented that there "should be" six, there are other statements in the 1932 discussion — seven chambers are called k'aatc; "In outward appearance they are alike, . . .;" and "They are said to be similar inside, too, . . ." — which remain unqualified. For these very reasons, and until more decisive evidence is presented in regard to both Mauharots and the Fire society chamber, it seems preferable to leave the number of Acoma kivas at seven.

17 Hawley, *Big Kivas*, p. 294.

18 Stirling, *Origin Myth*, p. 18; White, *Acoma Indians*, p. 15.

19 Stirling, *Origin Myth*, pp. 18-19.

20 *Idem*, p. 18.

roborate the data just quoted from Stirling for Acoma. Stirling was also told that the firepit immediately under the ladder was called "kohaiya," that is bear.[21] At Cochiti, a different, but interestingly parallel, concept is found; there the firepit is referred to as "mo'katch," mountain lion. Both animals are closely associated with the medicine societies, with hunting rituals, and with numerous other ceremonial facets.

Sheer preponderance of frequency of instances lends favor to the dual system as the original Keresan kiva pattern. Following this assumption, Acoma becomes the deviant — apparently having yielded to influence or pressure from Zuñi and possibly Hopi. This proposal fits rather nicely so long as only history and ethnology are considered. The situation tends to become confused again, however, when, for example, the present day Cochiti claim as their ancestral homes various neighboring archaeological sites which have surface indications of not two, but several, kivas.

CEREMONIALISM

Shifting from considerations of the more material aspects of Keresan kivas and other manifestations of culture, it is also of value to examine a sampling of the non-material aspects of the associated ceremonial organization. First, the eminent position of the cacique at the head of each theocratic tribe is a Keresan universal, with the exception in recent years only of Laguna where the conservative faction lost out in the intra-pueblo dispute of several decades ago. The Keresan pattern varies from that found among the Tewa, for example, where the Summer and Winter caciques alternate their leadership as their respective moieties shift responsibilities for the tribal well-being.

While the cacique is the acknowledged Keresan leader, there are local variations. At Acoma, he is the head of the ka'tsīna cult; this is not the case in the east, as at Cochiti where the ka'tsīna activities fall under the control of the Shrū'tzī society. While the Cochiti cacique, referred to at various times as the "father" of his people and even occasionally as the "mother," would be the nominal head of the Cochiti ka'tsīnas as well, the Acoma description gives a rather different impression of the nature of this relationship.

At Acoma, the cacique does not belong to a medicine society. Parsons reported the same situation for Santa Ana.[22] White concurred in this statement although adding the implication that membership in a medicine society is optional, or irrele-

21 *Idem*, p. 19.

22 Elsie Clews Parsons, *Isleta, Santa Ana, and Acoma* (American Anthropologist, vol. 22, pp. 56-69, Menasha, 1920), p. 66.

vant, rather than forbidden.[23] Again, this differs from Cochiti, Santo Domingo, and others in the east where the cacique is the simultaneous head of the Flint medicine society. His clan affiliation in these eastern towns is of no consequence; in contrast, at Acoma the cacique must be of the Antelope clan. Such an association between clan and religious status and role is again suggestive of the western Puebloans rather than the easterners.

It was interesting, in view of these distinctions, to be told by Cochiti informants that "the old way" (and, by inference, the correct way) was for the cacique not to be a member of any society, or, in other words, the cacique should be si'sh'tī, or a common man. Several volunteered that it was their understanding that the present cacique at Zia was si'sh'tī. There has not been an opportunity to check on this point, but in view of the Acoma pattern and other bits of evidence it is well worth further investigation.

White stated there were two war priests in each of the Keresan villages except for Acoma where there were three.[24] It is not completely clear whether White had reference to what the writer has chosen to call war chiefs or whether he had in mind the officials perhaps best referred to as war captains, at least for purposes of distinguishing between them. The war chiefs are seemingly older, i. e., aboriginal, and according to some statements would seem to have outranked even the cacique, at least in times of external strife. With the passing of active intertribal warfare, these offices have lapsed in Pueblos such as Cochiti, although their duties have been in part absorbed by the war captains. These war captains have the right at present to bring the cacique to task for alleged misconduct or negligence. They bear the official titles of the legendary Twin War Gods, Masewi and Oyoyewi. These characters, of course, are found far beyond the bounds of Keresan culture.

A further distinction between Acoma and the eastern Keresans is in the rather frequent appearance of the number ten in ceremonial conceptualizations and procedures among the former group. It is not prominent at all among the eastern tribes where four or six are more apt to receive emphasis.

Acoma is again interesting in comparison with other Keresans because of the absence there of the Kwi'rēna society. Elsewhere among the Keresans, this society is the counterpart although perhaps not quite the equal of the Ku'shalī (Ko'share) society. Whether or not this Kwi'rēna society absence represents a relatively recent loss at Acoma is not known.

Further ceremonial comparisons among the Keresans and between these tribes

23 White, *Santa Ana*, p. 97.

24 Leslie A. White, *The Pueblo of Santo Domingo, New Mexico* (Memoirs, American Anthropological Association, no. 43, Menasha, 1935), p. 38.

and their Puebloan neighbors are provided by the medicine societies. These were termed "prominent" by White in his analysis of a quarter of a century ago.[25] In his paper, he announced a two-fold purpose: to establish a norm, in general outlines, of the Keresan medicine cult; and to note the divergences of each tribe from this standard. Insofar as functions of the various societies are concerned, White gained the distinct impression that the treatment and curing of diseases constituted their major function. In this work, the society members utilized stone figures, herb medicines, and supernaturally derived powers. From these activities, it was easy to become active in war and scalp ceremonies, birth and death rites — expanding functions in which there was a gradual elaboration of ritual.

Later, with the growing importance of agriculture — so White hypothesized — the medicine societies became involved in rain making procedures (perhaps better termed weather control — C. L.) for which they adapted elements of their curing rituals.[26] White suggested that subsequently the ka'tsĭna dance, masked, served to complete the psychological cycle implied by the retreat — "the retreat is the prayer, the dance the answer (symbolically). The dance is the *motor* counterpart of the *spiritual* retreat."[27]

In a footnote to his discussion of medicine societies and their possible affiliations with the ka'tsĭna cult, White observed, "I have never found evidence of use of masks in the pueblos in the accounts of the early Spanish explorers."[28] Implicit in this statement is the inference of rather recent innovation of the ka'tsĭna cult among the Puebloans. However, subsequent research has revealed data which necessitate a fresh evaluation. In a recent study, Anderson, after noting Haury's evidence of masks "like those of today as early as the Salado occupation of the Gila area, perhaps in the fourteenth century,"[29] commented,

> From Luxán's account of the Espejo expedition . . ., we may infer the presence of a well-established kachina cult on the Rio Grande in the late sixteenth century, and its flourishing condition in the middle of the seventeenth century argues for some antiquity.[30]

25 Leslie A. White, *A Comparative Study of Keresan Medicine Societies* (Proceedings, 23rd International Congress of Americanists, pp. 604-619, New York, 1930), p. 604.

26 *Idem*, p. 618.

27 *Idem*, p. 619.

28 *Ibid.*

29 Emil W. Haury, *The Excavation of Los Muertos and Neighboring Ruins in the Salt River Valley, Southern Arizona* (Papers, Peabody Museum, Harvard University, vol. 24, no. 1, Cambridge, 1945), pp. 198-200.

30 Frank G. Anderson, *The Pueblo Kachina Cult: a Historical Reconstruction* (Southwestern Journal of Anthropology, vol. 11, pp. 404-419, Albuquerque, 1955), pp. 405-406.

Anderson, in addition to reviewing White's reconstruction, included a brief appraisal of Parsons' viewpoint as well.

> Curiously enough, Parsons has used the Keresan data to arrive at a very different conclusion. Pointing to mask use at society initiations, and possible general control of masks by Keresan medicine men, she concludes [1923: 164 fn], "I have little doubt that the efflorescent mask cult . . . developed out of the more restricted society use of masks." I believe, however, that White's interpretation is fundamentally more sound, partly because it is apparently almost entirely societies of the Keresan type (however far afield) which employ masks. Such societies are rare and relatively unimportant precisely among those western groups — Zuñi and Hopi — where the general mask cult flourishes most notably, and Parson's hypothesis thus seems to put upon them a burden of diffusion out of proportion to their strength.[31]

In the general reëxamination of such data, the recent views of Underhill merit attention.

> Is it possible, then, that Hopi and Zuni developed their very specialized systems, including matriliny, in desert isolation, while the main stream of Mexican influence came up the Rio Grande, reaching the Eastern Pueblos first and being relayed west? This is only one of many questions which can be proposed here but not answered. A consciousness of it, however, may sharpen our perception of certain differences.
>
> One such is the elaborate development of the kachina cult in the west. Parsons (1939: 979) assumes that this cult was passed by Zuni to the Keres. However, borrowing might have been in the other direction. God impersonation was practised both in Mexico and in most of the Eastern Pueblos though it did not hold a position of supreme importance. If Keres passed it to the Zuni who themselves admit teaching it to Hopi (Parsons 1939: 971), then we might have here another example of elaboration in isolation. . . .[32]

In the course of his remarks on the medicine societies and the ka'tsīna cult, White noted, "Through exigencies of housing, custody of masks has fallen into the hands of curing societies (an established fact at Cochiti and San Felipe)."[33] While this may have been true as of the time White wrote, it is no longer true at Cochiti. There, the Shrū'tzī society, in a special house loaned to them by a private individual, cares for the masks, a situation which the Cochiti claim has prevailed "for a long time." (The Shrū'tzī society is the managing group for the ka'tsīnas, but it is not a medicine society — being made up of individuals who are si'sh'tī, or "raw," i. e., not medicine men.)

White pointed to Acoma as a special development of the pattern of certain

31 *Idem*, p. 413.

32 Ruth M. Underhill, *Intercultural Relations in the Greater Southwest* (American Anthropologist, vol. 56, pp. 645-656, Menasha, 1954), p. 650.

33 White, *Comparative Study*, p. 619.

masks being worn by medicine men exclusively. Subsequent field work at Cochiti by the writer has revealed a number of masks there which only medicine men are allowed to wear (because of a peculiar type of whistle these characters must make and only medicine men "know how to make this sound").[34] There is also a mask "Ma'sha-wa," the Turkey Buzzard Ka'tsīna, which is owned by the Giant Medicine society; this figure appears briefly in certain village-wide curing ceremonies.

Further comparison was made by White in regard to certain affiliations of the medicine societies with other societies.

> . . . The close association between the Flint society and the *koshare* and between the Ci'k'amɛ society and the *Quirena* must, I feel, be taken as a typical Keresan feature. Acoma is perhaps the most aberrant in this respect.[35] (The absence of the Quirena, or Kwi'rēna, society at Acoma has already been commented upon in the present paper. — C. L.)

In conclusion, White singled out Santo Domingo and San Felipe as those tribes nearest the Keresan norm as this had been defined in his analysis. He ranked Cochiti and Zia close behind and added the comment that "Sant' Ana, Laguna, and Acoma diverge most widely."[36] In view of points discussed in the present paper, it would seem that Laguna's divergences are understandable in terms of known historic circumstances, as, for example, the relatively recent founding of this pueblo and tribe. Of the remaining two, Santa Ana and Acoma, the latter reveals the greater number of divergences as well as the greater degree of variation from the Keresan norms. Explanations for these differences remain to be worked out in terms of culture history.

SOCIAL ORGANIZATION

Among the outstanding contributions to our knowledge of Puebloan social organization are two studies by Parsons. First is the more restricted analysis of *The Kinship Nomenclature of the Pueblo Indians*,[37] and, second, the general survey presented as the "Introduction" to her monumental two-volume work, *Pueblo Indian Religion*.[38] Comprehensive treatment of Puebloan social organization was

34 Archaeological-ethnological evidence of "Bitsitsi" whistles suggesting the possible mechanical nature of this Keresan whistle is presented by Stanley A. Stubbs and W. S. Stallings, Jr. in their recent monograph, *The Excavation of Pindi Pueblo, New Mexico* (Monographs of the School of American Research and The Laboratory of Anthropology, no. 18, Santa Fe, 1953), pp. 136-137.

35 White, *Comparative Study*, p. 617.

36 *Idem*, p. 619.

37 Elsie Clews Parsons, *The Kinship Nomenclature of the Pueblo Indians* (American Anthropologist, vol. 34, pp. 377-389, Menasha, 1932).

38 Parsons, *Pueblo Indian Religion*, pp. 1-111.

not published subsequently until Eggan's *Social Organization of the Western Pueblos*.[39]

While more intensive within the range of the indicated topic, Eggan's study focused primary attention on the tribes of the western Pueblo area, of which only Acoma and Laguna are of direct concern here. However, in his conclusions, Eggan attempted to place these tribes in better perspective by including additional data pertaining to the eastern tribes. As these comments involve the Keresans, they are recapitulated here with the addition of data on Acoma by Mickey[40] and on Cochiti by the writer.[41]

A number of statements from Eggan's "Conclusions" may serve as a base here. "The social structures of the western Pueblos so far considered, despite the variations we have noted, conform to a single general pattern: the 'western Pueblo' type."[42] Eggan went on to point out that this type "is not limited to the Southwest but is found elsewhere in North America and, in modified form, in other parts of the world as well." Principal characteristics of this type were noted by Eggan as follows: (1) a kinship system of the "Crow" form organized in terms of a lineage principle; (2) a household organization on the basis of the matrilineal extended family; (3) a formal organization based on the lineage and clan and, in some cases, the phratry group; (4) an associational structure organized around the ceremony and its symbols, with relationships to the lineage, clan, and household; (5) a theocratic system of social control; and (6) a further extension of the social system to the world of nature through the extension of social patterns to natural phenomena.[43]

Eggan singled out the kinship system as the "basic feature of western Pueblo social structure." Noting that Spier's study had placed the western Pueblos in three separate groups, or types (Crow type – Hopi, Hano, Laguna; Acoma type – Acoma; and Mackenzie Basin type – Zuñi)[44] Eggan, utilizing additional, more recent data, suggested it was "highly probable that all these tribes have (or recently had) kinship systems conforming to a single basic pattern which I have elsewhere referred to as the Crow subtype of the 'Lineage' type."[45]

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39 Fred Eggan, *Social Organization of the Western Pueblos* (Chicago, 1950).

40 Barbara H. Mickey, *Acoma Kinship Terms* (Southwestern Journal of Anthropology, vol. 12, pp. 249-256, Albuquerque, 1956).

41 Charles H. Lange, *The Pueblo of Cochiti, New Mexico: Past and Present* (Ms., University of Texas Press).

42 Eggan, *Social Organization*, p. 291.

43 *Ibid.*

44 Leslie Spier, *The Distribution of Kinship Systems in North America* (Publications in Anthropology, University of Washington, vol. 1, no. 2, pp. 71-88, Seattle, 1925).

45 Eggan, *Social Organization*, p. 292.

Mickey's data corroborated those of Eggan for the most part. She was able to indicate empirically what Eggan had been forced to reconstruct more or less hypothetically due to either incomplete information or confusion caused by failure to distinguish between terms of address and terms of reference in the earlier published material. She found her data regarding bilaterality agreeing with those of Eggan.[46]

In turning to the tribes of the eastern Pueblo area, Eggan first noted the data as incomplete and often conflicting; however, he suggested several working hypotheses as bases for future research. In contrast to relative uniformity among the western tribes, Eggan pointed to "considerable variation in social structure within the eastern Pueblos — as well as certain major differences between east and west."[47] Continuing, Eggan commented,

> The eastern Keresan villages are characterized by matrilineal, exogamous, named clans without "totemic" affiliations or any control of land, ceremonies, or status positions. The Medicine societies are the dominant groups and control the village leadership; other societies frequently are linked with one or another of the Medicine societies in various ways. There is also a dual organization, associated with the Squash and Turquoise kivas, which has ceremonial functions; generally membership is patrilineal, but, at Santa Ana, White reports a dual grouping in terms of the matrilineal clans [1942a: 142-143]. The kinship system tends to be "classificatory" and bilateral, with most terms cognate with those of Laguna and Acoma. Closer analysis of the kinship data for Cochiti and San Felipe suggests a lineage pattern as the earlier form [Goldfrank; White]; White's analysis of Santa Ana kinship comes to a similar conclusion: . . . The use of the term "mother" for the father's sister, which is characteristic of the eastern Keresan systems, and which was noted at Acoma and occasionally at Laguna, would have a similar explanation.[48] (That is, the earlier Crow type of terminology is breaking down and giving way to the pattern noted by White and Eggan — C. L.)

Data gathered at Cochiti by the writer[49] conform, for the most part, to Eggan's brief characterization. However, a few modifications are suggested by what seems to have been the case perhaps a century ago. One gains the impression that Cochiti clans may formerly have exercised control over the agricultural lands and may have had formal connections or affiliations with certain ceremonial positions or functions although this latter impression is not as well founded as that concerning land control. The situation reported by White for Santa Ana wherein the dual groupings, ceremonial, appeared to have clan associations was matched

46 Mickey, *Acoma Kinship Terms*, p. 249.
47 Eggan, *Social Organization*, p. 305.
48 *Idem*, p. 307.
49 Lange, Cochiti ms.

by earlier Cochiti data gathered by Bandelier[50] and by Curtis.[51] Both expressed a rather strong feeling that there existed kiva endogamy insofar as clan affiliations were concerned, at least in times past — or, in other words, the impression of a phratry system is gained from both sources.

While Jemez, as mentioned, is not a Keresan village, its proximity to the eastern Keresans makes its characteristics nevertheless of interest. Thus, Eggan's evaluation of the position of Jemez among the Pueblo tribes is included here. (Italics have been added by the present writer to indicate correspondences between Jemez and the past or present situations at Cochiti.)

> The Towa-speaking village of Jemez [Parsons 1925; Reagan 1917], while here arbitrarily classed with the eastern Pueblos, has a social structure that approximates that of the western Pueblos in many respects. *The clan organization is matrilineal and exogamous*, and both the mother's and the father's clans are important as kinship units, marriage into the father's clan being disapproved. [White reported similar feeling at Santa Ana Pueblo[52] — C. L.] *Clans have ritual functions* [though admittedly only in relatively few situations at Cochiti — C. L.], and the village chief and his assistants must be selected from certain clans. *The chief* is selected by the heads of the various societies and *conducts the solstice ceremonies; land is worked for him by the villagers under the direction of the war captains. There are two kivas, children joining the kiva of their father and wives transferring to that of their husbands,* but *the ceremonial dual division found elsewhere is expressed largely through the two "Clown" societies. There is no formal division into Summer People and Winter People, as among the Tewa. The Katchina cult is in operation, and initiation is through a ceremonial "father" who acts as a sponsor. The societies have both weather control and curing functions and participate in periodic "retreats" for the benefit of the village.*
>
> The kinship system is not adequately recorded but appears to be a mixture of eastern and western patterns. . . . *The household is predominantly of the single-family type, though extended families of western pattern are found.* Parsons reports houses are owned predominantly by men, but Reagan's account from around 1900 *indicates female control of the house and of the crops stored therein* and toleration of the husband on the Hopi pattern. . . .[53]

Eggan's comments have been quoted so extensively because they repeatedly coincide with the writer's impression of what was very probably the situation at Cochiti a number of decades, even a century or more ago. Rather than pulling

50 Adolf F. Bandelier, *Final Report of Investigations among the Indians of the Southwestern United States . . .* (Papers, Archaeological Institute of America, American Series III, Cambridge, 1890), p. 301.

51 Edward S. Curtis, *The North American Indian* (vol. 16, Norwood, Massachusetts, 1926), p. 86.

52 White, *Santa Ana*, p. 153.

53 Eggan, *Social Organization*, pp. 308-309.

Jemez into the cultural context of the eastern Pueblos, it suggests western origins for both Towa and Keresans.

SUMMARY

Innumerable details from the literature and from personal research could be cited in addition to those included here; still other details remain to be gathered in the field.

Insofar as the historic period is concerned, the practical value of such further detail in the reconstruction of culture history for the Keresans, specifically, and for the Southwestern Puebloan peoples, generally, would, with few exceptions, lie in simply reinforcing with additional examples those things we already know or are reasonably certain of at present.

The Keresans, with the exception of Laguna (founded during historic times), were in their present locations at the beginning of the historic period. The same is true for surrounding tribes, with few exceptions, well-known through historical documentation. It seems that during the entire span of historic times, under the Spaniards, there has been constant movement of Puebloan individuals from one tribe to another. These have been trading contacts; social relations with and without the more durable aspects of actual marriage leading, in turn, to continued contacts; and ceremonial visitations, including cures, initiation aid, and both participation in and witnessing of various rites — attractive even to the extent of borrowing elements and adapting them for home use. Such phenomena are well known for the historic period; they occur among villagers of common linguistic affiliation and almost as commonly among those unrelated linguistically except by way of Spanish, formerly, and, increasingly, English in recent decades.

It appears quite safe to hypothesize similar procedures during prehistoric times as well — perhaps less frequently, but cumulatively of great importance in shaping Southwestern Puebloan culture. While much has been written along this line of thinking, or hypothesizing, little actual research has been carried on in this, for a variety of reasons.

Culture history studies, in a long-term sense, will continue to be superficial until excavations have been carried out, at least in the form of minimal testing, at essentially all historic and contemporary villages. With such an obvious solution, it may be surprising that such excavations have not been conducted in far greater numbers. The blame cannot be placed completely upon the anthropologists; the considerable reticence of the Pueblo Indians and all its ramifications have been and continue to be great barriers to such research.

Through the impetus of a need for evidence in support of various claims before

the Indian Claims Commission during the past decade, a limited number of excavations have been conducted with little harm to the Indian view and with great benefit to anthropological research. Additional opportunities must be constantly sought as general education reduces the traditional reticence which has hampered such investigations. In the meantime, other categories of details may be marshaled and evaluated with benefit. However, until the actual stratigraphic and site distributions been clarified, the gathering of details at any time horizon fails to provide the full perspective necessary for mastering the culture history of the Southwestern Pueblos.

In conclusion, attention should be focused once more upon the major problem in Keresan culture history. This rises directly from the dichotomy between the eastern and western components of Keresan culture. In the west, Laguna may be rather quickly disposed of as a tribe founded in known historic times and at present the most acculturated of any Keresan group (in itself an interesting potential correlation). This leaves Acoma, in place since before the coming of the Europeans, to contrast with the eastern, or Rio Grande, villages which were also in their present locations at the time the Spaniards first entered the area. The exchanges mentioned in this paper are of interest for their implications in multiple acculturation and in general cultural dynamics. To reveal culture history extending farther back into time, however, it is up to the archaeologists to provide the framework of both time and space distributions.

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KINSHIP AND SOCIAL ORGANIZATION OF THE YEKUÁNA AND GOAJIRO[1]

JOHANNES WILBERT

YEKUÁNA KINSHIP TERMINOLOGY

THE PRESENT PAPER is concerned mainly with the kinship system of the Yekuána Indians. The data were collected from a Makiritare Indian. Although the Makiritare are but *one* Yekuána subgroup out of several, and although we were told by our informant that the phonetics of the kin terms may vary considerably from one group to another, we are sure that these facts are of no structural importance with respect to the system as such. The Yekuána tribes belong to the Cariban linguistic stock. They occupy a large area between the Parágua and the upper Orinoco where they live in scattered settlements with some concentration along the rivers Parágua, Caura, and the headwaters of the Orinoco.

Subsistence is based on hunting and brand-tillage agriculture, supplemented by fishing and gathering. Bitter manioc is the staple crop, followed by maize, but pineapples and tobacco are also grown. The dog is the only domestic animal. Both men and women fish. The men hunt, clear the land, plant the crops, and also weave and make baskets, coiled pottery, and dugout canoes. Intertribal trade is important. A settlement includes a single large communal dwelling, oval in shape, with a conical thatched roof and walls of wattle-and-daub. Individual families occupy apartments along the walls, the center of the hut being reserved for communal dinners and as a bachelors' room.[2]

Of the twenty-one fundamental kinship terms listed below nineteen are always used in address and two only in reference. The latter refer to "husband" and "wife" who, because of a strong avoidance taboo are not supposed to address each other in public. No teknonyms are employed, and personal names are only known of a few individuals. A number of terms such as those for sisters and younger brother are always used with the diminutive suffix /-kɔ/, which to omit is considered to be very rude. All kinship terms appear to be elementary terms and most of them are highly classificatory with regard to their range of application. Only two terms of address are denotive, not counting the referential forms for "husband" and "wife."

1 Published with the permission of the Sociedad de Ciencias Naturales La Salle of Caracas.

2 R. Koch-Grünberg, *Vom Roroima zum Orinoco* (Stuttgart, 1923), vol. 3, pp. 250-355; G. P. Murdock, *Outline of South American Cultures* (Behavior Science Outlines, vol. 2, 1951, New Haven), p. 121; G. P. Murdock, *South American Culture Areas* (Southwestern Journal of Anthropology, vol. 7, 1951, pp. 415-436), pp. 432-433; J. Gillin, "Tribes of the Guianas" (in *Handbook of South American Indians*, J. H. Steward, ed., vol. 2, pp. 799-860), pp. 848-850.

List and application of kinship terms[3]

1 kóko: FaFa/FaFaBr/FaFaBrSo/FaFaSiSo/FaMoBr/FaMoBrSo/FaMoSiSo/MoFa/MoFaBr/MoFaBrSo/MoFaSiSo/MoMoBr/MoMoBrSo/MoMoSiSo

2 áida: FaMo/FaMoSi/FaMoSiDa/FaMoBrDa/FaFaSi/FaFaSiDa/FaFaBrDa/MoMo/MoMoSi/MoMoSiDa/MoMoBrDa/MoFaSi/MoFaSiDa/MoFaBrDa

3 háku: Fa/FaBr/MoSiHu

4 éme: Mo/FaBrWi/MoSi

5 wáñene: FaSi/MoBrWi/WiMo/HuMo

6 yáwo: MoBr/FaSiHu/WiFa/HuFa

7 udúi: e.Br (m.s.)/FaBr e.So (m.s.)/MoSi e.So (m.s.)

8 yákonõ: y.Br/FaBr y.So/MoSi y.So/FaSi y.So (w.s.)/MoBr y.So (w.s.)/FaSiSoSoSo (w.s.)/FaSiSoDaSo (w.s.)/FaSiDaSoSo (w.s.)/FaSiDaDaDa (w.s.)/MoBrSoSoSo (w.s.)/MoBrSoDaSo (w.s.)/MoBrDaSoSo (w.s.)/MoBrDaDaSo (w.s.)

9 yáya: e.Si/FaBr e.Da/FaSi e.Da (m.s.)/MoBr e.Da (m.s.)/MoSi e.Da/BrWi (m.s.)/WiBrWi/WiSi

10 adïya: y.Si/FaBr y.Da/FaSi y.Da (m.s.)/MoBr y.Da (m.s.)/MoSi y.Da/FaSiSoDa (m.s.)/FaSiDaDa (m.s.)/MoBrSoDa (m.s.)/MoBrDaDa (m.s.)/FaSiSoSoDa (m.s.)/FaSiSoDaDa (m.s.)/FaSiDaSoDa (m.s.)/FaSiDaDaDa (m.s.)

11 yayáke: e.Br (w.s.)/FaBr e.So (w.s.)/FaSi e.So (w.s.)/MoBr e.So (w.s.)/MoSi e.So (w.s.)/HuSiHu/HuBr

12 wáne: FaSiSo (m.s)/MoBrSo (m.s.)/FaSiSoSoSo (m.s.)/FaSiSoDaSo (m.s.)/FaSiDaSoSo (m.s.)/FaSiDaDaSo (m.s.)/MoBrSoSoSo (m.s.)/MoBrSoDaSo (m.s.)/MoBrDaSoSo (m.s.)/MoBrDaDaSo (m.s.)/SiHu (m.s.)/WiBr/WiSiHu

13 yáko: FaSiDa (w.s.)/MoBrDa (w.s.)/FaSiSoSoDa (w.s.)/FaSiSoDaDa (w.s.)/FaSiDaSoDa (w.s.)/FaSiDaDaDa (w.s.)/MoBrSoSoDa (w.s.)/MoBrSoDaDa (w.s.)/MoBrDaSoDa(w.s.)/MoBrDaDaDa (w.s.)/BrWi (w.s.)/HuBrWi/HuSi

3 Phonetic transcription:
o – unrounded
d – front. pal.
ŕ – [ɾ]
~ – nasal

14 unédï:	So/Da/BrSo (m.s.) /BrDa (m.s.) /SiSo (w.s.) /SiDa (w.s.) / FaBrSoSo (m.s.) /FaBrSoDa (m.s.) /MoSiSoSo (m.s.) / MoSiSoDa (m.s.) /FaBrDaSo (w.s.) /FaBrDaDa (w.s.) / MoSiDaSo (w.s.) /MoSiDaDa (w.s.)
15 ɸóne:	BrSo (w.s.) /SiSo (m.s.) /FaBrSoSo (w.s.) /FaBrDaSo (m.s.) / FaSiSoSo/FaSiDaSo/MoBrSoSo/MoBrDaSo/ MoSiSoSo (w.s.) /MoSiDaSo (m.s.)
16 háse:	BrDa (w.s.) /SiDa (m.s.) /FaBrDaDa (m.s.) /FaBrSoDa (w.s.) / FaSiSoDa (w.s.) /FaSiDaDa (w.s.) /MoBrDaDa (w.s.) / MoBrSoDa (w.s.) /MoSiSoSo (w.s.) /MoSiDaDa (m.s.)
17 háde:	SoSo/SoDa/DaSo/DaDa/BrSoSo/BrSoDa/BrDaSo/ BrDaDa/SiSoSo/SiSoDa/SiDaSo/SiDaDa/FaBrSoSoSo/ FaBrSoSoDa/FaBrSoDaSo/FaBrSoDaDa/FaBrDaSoSo/ FaBrDaSoDa/FaBrDaDaSo/FaBrDaDaDa/MoSiSoSoSo/ MoSiSoSoDa/MoSiSoDaSo/MoSiSoDaDa/MoSiDaSoSo/ MoSiDaSoDa/MoSiDaDaSo/MoSiDaDaDa
18 xadáne:	SoWi
19 xanïde:	DaHu
20 "ïño":	Hu
21 "xïñámo":	Wi

Kin Relationships

Kinship is bifurcate-merging. The father's brother is classified with the father, while the mother's brother is designated by a different term. On the other hand, the mother's sister is classified with the mother, while the father's sister is designated by a different term. Other relatives merged are Ego's son and Ego's brother's son. Some kinship terms vary according to the sex of the speaker, and others are used to denote relatives irrespective of their sex and age. Grandparents and their brothers and sisters are terminologically distinguished by sex, Ego's siblings and cousins by sex and age. Exceptions are made with the cross-cousins whom one can marry: they are referred to by the same terms as are brother-in-law and sister-in-law, and their parents are classified as parents-in-law. Cross-cousin terminology, then, reflects the system of marriage. Parallel cousins are classified like Ego's siblings and are not considered by Ego as potential spouses. On the basis of cousin terminology the kinship system of the Yekuána is thus of the Iroquois type.

The terms for cross-cousins are extended to include their children's children, distinguishing between sex. The offspring of siblings' children, as well as those of

parallel-cousins, are designated by one term without marking sex differences. The latter is also true of the term used to designate brother's children and those of male parallel cousins; whereas by using two different terms, differentiations by sex are made for sister's children and those of female parallel-cousins. The term for "younger sister" is extended to include all individuals of opposite sex in the line of Ego's cross-cousins.

Avoidance regulations are strictly observed in Yekuána groups. They are extended from FaSi, MoBrWi, HuMo, WiMo, to include all cross-cousins and their offspring of opposite sex and parents-in-law and siblings-in-law of opposite sex. Avoidance was said to be not observed between Ego and Mo, MoSi, FaBrWi, parallel-cousins, or siblings.

It is certainly remarkable that an avoidance taboo exists between husband and wife in Yekuána society. Koch-Grünberg[4] observed that a Yekuána wife never serves her husband first during communal banquets, but from this one would not necessarily deduce a husband-wife avoidance; especially since this kind of avoidance is generally unheard of between partners of this category.[5] To judge from the confirmation given by our informant and according to the kinship terminology, however, there can be no doubt concerning the correctness of this statement. Avoidance taboos thus do not coincide with incest taboos in Yekuána society. In a case of emergency the general pattern of avoidance may be disregarded, when partners converse with averted faces.

Relations between husband and wife were said to be generally friendly, and children treat their parents with respect. Intimate relations exist between grandparents and grandchildren. Instead of calling them by the general term of mïdekáka (children) they may bestow the name emukewedyu on them; a term which may be interpreted best as "my little one" but actually cannot be translated. The grandparents make little presents to their grandchildren, e.g., food, a bow, or a musical instrument. When grown up, the grandchildren present their grandparents with food or weapons, such as a blowgun. If a child disobeys his grandparents, the latter have the right to punish him; a father will call his child to order if it should ridicule the old ones. Grandparents look after their grandchildren whenever their parents are out in search of food, and they accept them in their household should they become orphans. As a rule, however, orphans join the family of a maternal or paternal aunt.

Within the extended family greatest respect is paid to the parents of the spouse, and especially to the father of the wife. He is obeyed in all domestic affairs. A

4 Koch-Grünberg, *Vom Roroima zum Orinoco*, p. 353.
5 G. P. Murdock *Social Structure* (New York, 1949), p. 278.

child was said to owe more respect on a whole to his father because he was the one who "filled" a "vessel," the mother, whose function was only to receive and guard.

There exists a kind of blood-brotherhood among the Yekuána, and according to our informant also among the Guaharíbo. Shortly before meeting an enemy the warriors will halt on their path to make sure everybody who came so far will continue on the war path as a man one can count on. Two leading individuals will cut their arms, collecting the blood in a leaf formed as a funnel. Each of them will trickle his own blood into the partner's nose, upon which they address each other as wuéčakono, meaning "my intimate one." The same term, however, is also used by consanguineal brothers who love each other very much: wuéčakono thus gets the meaning of "my intimate brother." While the war leaders exchange their blood, the warriors squeeze the sap out of the stems of a certain plant to drop it into each other's noses. This would cause them to become like "wild animals," and was said to be the reason why many enemies would call them "tigers." The exchanging of blood and the consuming of the plant's sap anticipates the approaching victory. The war chiefs lead their men on the final stage towards the enemy and nobody may return after this ceremony. The war chiefs exchange their blood each time they encounter the same situation.

Notes on the Social Organization

Although cohabitation of the extended family within a single communal house calls for subordination of its nuclear families, the latter, nevertheless, are the fundamental social and economic units among the Yekuána. Most of the daily activities are carried out by the members of the nuclear family for its direct benefit. On festive occasions, after a game drive or when a big piece of game is brought in by a hunter, the food is put at the disposal of the head of the extended family to be redistributed among its members. Within the nuclear family each member is allotted his share by the father.

The prevailing rule of residence of a married couple is matrilocal. Heretofore the Yekuána have been described as patrilocal, mainly because of Koch-Grünberg's statement that the woman follows the man to live in his house, that she becomes a member of his "Sippe" and that her children belong to her spouse's group.[6] We have tested our informant on this question and there remains no doubt that at least among the Makiritare matrilocality prevails. Since Yekuána villages mostly consist of one huge communal dwelling marriage involves the removal of the groom to another village in local exogamy. There was said not to exist any exception to either matrilocality or local exogamy. Only upon the death of the wife or of *both*

6 Koch-Grünberg, *Vom Roroima zum Orinoco*, p. 354.

of her parents is the man free to return to the kin of his family of orientation. It may be that the prevailing opinion of previous authors concerning the patrilocality of the Yekuána rests on such an exceptional case hit upon by Koch-Grünberg. In case of active hostilities between the husband's family unit of orientation and that of procreation he may be exempted from participation in any action against the members of the first group.

Our informant approved of Koch-Grünberg's statement that polygyny is practiced among the Yekuána.[7] Two to five women may be married by a man, and sororal marriages are frequently to be observed. The levirate is practiced in the event the husband's brother is a bachelor. Polygyny does by no means seem to indicate a special degree of achieved status or rank. Within the extended family authority rests with the *pater familiae*. His function may be inherited by the paternal uncle or by the eldest son: the paternal uncle ranks first, however. The head of the local group is addressed by kóko, and the last chief to have been widely known lived towards the end of the 19th century at the Conucunuma under the name of Aramáre.[8] A paramount chief does not seem to be recognized among the Yekuána. Instead the local group is politically autonomous under the headman.

Personal belongings are inherited by sons or daughters, depending on the sex of the defunct.

We have not inquired deeply into marriage rites. Special ceremonies, however, do not seem to exist. Initiation for boys was said to be unknown, although girls, when menstruating for the first time, had to stay in a cabin (closed from all sides) within the communal dwelling. This seclusion is observed for fifteen to twenty days, a period during which the girl may eat very little and only foods which had been "blown upon" by the piache (xïwái). After this period is over the girl is led by her mother to a place some 400 m away from the house from where she has to run the gauntlet between two lines of men in the direction of the house. She is whipped with leaves of curagua until she reaches the house where her father and her paternal uncle receive her. Here the candidate has to stand still with her hands raised over her head while the two men continue the whipping for a while. If she has learned how to control herself the girl is not supposed to cry. No explanation was given of the object of this ceremonial whipping, but Koch-Grünberg[9] reports the practice of prophylactic whipping against sickness, and there obviously is some connection. After the ceremony a festival begins which lasts for

7 *Idem*, p. 355.

8 J. Chaffanjon, *L'Orénoque et le Caura, relation de voyages exécutes en 1886 et 1887* (Paris, 1889), p. 265.

9 Koch-Grünberg, *Vom Roroima zum Orinoco*, p. 64, Abb. 2

some two or three days; from that time on the girl is considered marriageable. Girls are married early and bachelors practically do not exist.

Future field work will have to disclose whether it is true that a unilinear rule of descent has indeed not been established among the Yekuána, as our informant told us. So far we can only say that the Yekuána have a society with bilateral descent, local exogamy, matrilocal residence, Iriquois cousin terminology, and matri-demes. In general it is rare to find Iroquois cousin terminology with bilateral descent. The matri-deme structure, however, resulting from local exogamy and matrilocal residence, provides a perfectly good functional basis for Iroquois cousin terminology despite the absence of unilinear descent.

THE GOAJIRO KINSHIP SYSTEM

This section is intended to contribute to the study of Goajiro sociology, by giving some notes on the kinship system of this Indian group. Although some contributions, mainly with respect to the social organization of the Goajiro have been published in the past, information on their kinship system is almost completely lacking.

By chance, the author was visited by J. A. Polanko, a Goajiro Indian in his 'thirties, who belongs to the Guarero group of the Venezuelan part of the peninsula "La Goajiro." The informant is bilingual, speaking Spanish as a second language to his mother tongue. Although the information acquired through the help of this person has been carefully checked, it may very well be possible that certain mistakes are to be corrected by future research.

1 atúšu:	FaFa/FaFaBr/FaMoBr/MoFa/MoFaBr
2 óušu:	FaFaSi/FaMo/FaMoSi/MoFaSi/MoMo/MoMoSi
3 aší:	Fa/FaBr/FaSiHu/FaFaBrSo/FaFaSiSo/FaMoBrSo/ FaMoSiSo/MoSiHu/MoFaBrSo (w.s.)/MoFaSiSo (w.s.)/ FaSiSo/FaSiDaSo/FaSiDaDaSo
4 ei:	Mo/FaBrWi/FaSi/FaFaBrDa/FaFaSiDa/FaMoBrDa/ FaMoSiDa/MoFaBrDa (w.s.)/MoFaSiDa (w.s.)/FaSiDa/ FaSiDaDa/FaSiDaDaDa
5 aráurá:	MoBr/MoFaSiSo (m.s.)/MoMoBr/MoMoSiSo
6 arïngyu:	MoBrWi (m.s.)/WiSi (m.s.)/BrWi (m.s.)
7 áirï:	MoSi/MoFaSiDa (m.s.)/MoMoSiDa/SoWi/HuMo
8 emïrié:	y. Br
9 epáiya:	e. Br/e. Si (w.s.)

10 ašúnũ:	Si (m.s.)/FaBrDa (m.s.)/FaSiSoDa (m.s.)/MoSiDa (m.s.) FaSiDaSoDa
11 asánũ:	FaBrSo/FaBrDa (w.s.)/FaSiSoSo/FaSiSoDa (w.s.)/ FaSiDaSoSo
12 aguára:	MoSiSo (m.s.)/MoSiDa (w.s.)
13 EERĨ	MoBrWi (w.s.)/HuSi/BrWi (w.s.)
14 ačóng:	MoFaBrSo (m.s.)/MoFaBrDa (m.s.)/MoMoBrSo/ MoMoBrDa/MoBrSo/MoBrDa/So/Da/BrSo/BrDa/ FaBrSoSo/FaBrSoDa/FaBrDaSo (w.s.)/FaBrDaDa (w.s.)/ MoSiSoSo/MoSiSoDa/FaSiSoSoSo/FaSiSoSoDa/ FaSiSoDaSo (w.s.)/FaSiSoDaDa (w.s.)/ MoSiDaSoSo (m.s.)/MoSiDaSoDa (m.s)
15 aríng:	MoBrSoSo/MoBrSoDa/MoBrDaSo/MoBrDaDa/ FaBrSoSoSo/FaBrSoSoDa/FaBrSoDaSo/FaBrSoDaDa/ FaBrDaSoSo/FaBrDaSoDa/FaBrDaDaSo/FaBrDaDaDa/ MoBrSoSoSo/MoBrSoSoDa/MoBrSoDaSo/MoBrSoDaDa/ MoBrDaSoSo/MoBrDaSoDa/MoBrDaDaSo/ MoBrDaDaDa/MoSiSoSoSo/MoSiSoSoDa/MoSiSoDaSo/ MoSiSoDaDa/MoSiDaSoSo (w.s.)/MoSiDaSoDa (w.s.)/ SoSo/SoDa/DaSo/DaDa/BrSoSo/BrSoDa/BrDaSo/ BrDaDa/SiSoSo/SiSoDa
16 asípĩ:	SiSo (m.s.)/SiDa (m.s.)/FaBrDaSo (m.s.)/ FaBrDaDa (m.s.)/MoSiDaSo (m.s.)/MoSiDaDa (m.s.)/ MoSiDaDaSo (m.s.)/MoSiDaDaDa (m.s.)/SiDaSo (m.s.)/ SiDaDa (m.s.)/FaSiSoDaSo (m.s.)/FaSiSoDaDa (m.s.)
17 ačóingrĩ:	SiSo (w.s.)/SiDa (w.s.)/SiDaSo (w.s.)/SiDaDa (w.s.)/ MoSiDaDaSo (w.s.)/MoSiDaDaDa (w.s.)
18 áčĩrĩ:	Hu
19 ERĨRĨ:	Wi
20 ašímiyE:	WiFa/DaHu (m.s.)
21 auší:	HuFa/DaHu (w.s.)
22 EMEšú:	WiMo
23 ančũ:	SiHu (m.s.)/WiBr
24 harEšíu:	SiHu (w.s.)/HuBr
25 Epíyamuing:	HuBrWi
26 aruráing:	SoWiFa/SoWiMo/DaHuFa/DaHuMo

Twenty six fundamental kinship terms by which the Goajiro designate their relatives were recorded. Most terms are applied to more than one relative so that the system is classificatory in type. Among the Goajiro, kinship terms are almost exclusively used in reference, while in addressing a person teknonyms are employed, e.g.; nïshi pïichí – father of pïichí (nï – prefix, 3rd pers. singl. masc.; (a) shi – father; pïichí – baciro). The term corresponds to a male person who is the father of a boy child. This practice of teknonymy presupposes the presence of personal names. Either sex can be given a name in remembrance of an event which occurred on their birthday, e.g., "the one of the full moon," "the one of the blossoms of that tree," "the one of the war between . . .," etc. More frequently, however, personal names differ from each other by sex. Boys are called after strong and wild animals, such as baciro (pïichí), tiger (karáira), pig (pïrïkï), wild cat (músï), while girls' names are ornamental and flattering, e.g., "brilliant one" (herótsï), brownish one (muráachong), etc.

The teknonym employed to address a person is derived from the name of the eldest son, and in default of sons, from that of the eldest daughter. Personal names are used in addressing unmarried persons. It is a disgrace, however, for an adult not to have children. Grandparents may be called by a teknonym referring either to a son or to a grandchild.

Kinship terms are never employed in the forms as listed above, but only with possessive prefixes, e.g., tashí – my father; pïshií – your father; nïshí – his father; sïshí – her father; washí – our father; hashí – your (pl.) father; nashí – their father. In the table, kinship terms are represented by their root forms. As a friendly gesture, people may address each other by general terms such as "brother," "sister," etc., or they may call any small child "son" or "grandchild."

Of particular interest is the distinction the Goajiro make between "blood-relatives" and "flesh-relatives." Blood-relatives are all patrilineally related persons, whereas "flesh-relatives" are related to Ego through the mother's line. Kinship ties between flesh-relatives are considered to be stronger than those existing between blood-relatives. In practical life this would mean that Ego would have to help his maternal uncle in a fight against his own father. Among all kinsmen the maternal uncle possesses the greatest authority and his word counts most in all domestic affairs. Frequently, therefore, we find the extended family clustered around the homestead of the maternal uncle, which makes the Goajiro a matrilineal avunculocal society. Otherwise residence is matrilocal. Any one of the three aráur-relatives (maternal uncle), as listed in the table above, may replace the true maternal uncle in case of his death. But only his sister's children can be heirs of his possessions (including his wife or wives).

As for the sanctioned forms of cousin marriage, Ego (m. and f.) may marry any cousins on either side except for mother's sister's children. Ego (m. and f.) may also marry any kinsman of the third degree with the exception of a mother's sister's daughter's child. All relatives of the fourth degree are potential spouses. Polygyny is practiced and is definitely a mark of status and rank. Sororate is sanctioned although it very rarely occurs. The data indicate, then, a very typical system of Crow type.

No avoidance taboos were said to exist in Goajiro society, but great attention is paid to respectful behavior between kinsmen. In the family parents are respected equally highly by the children, whereas among siblings the brother enjoys greater authority than his sisters, and an elder than a younger brother. In the presence of the maternal uncle nobody is supposed to speak up unquestioned; this rule applies especially to the younger people. Grandparents maintain close and friendly relations with their grandchildren. They make gifts to the latter: horses, bows and arrows, drums, rifles, etc., and the grandchildren assist the old after having grown up. The father-in-law is respected greatly by his daughter-in-law. When visiting she serves him before she serves her mother-in-law. She does not, however, attend her own mother. Cousins are completely free to meet without being obliged to observe any avoidance regulations.

Artificial kin relations were said to be missing altogether among the Goajiro. Non-relatives are treated with great friendliness and may even be accepted as step-parents of an orphan of the group. Orphans usually join a family on the father's side.

CARACAS, VENEZUELA

IDEOGRAPHIC NUMBER-WRITING IN MAYA INSCRIPTION TEXTS: SOME CONSIDERATIONS[1]

FLOYD THURBER AND VALERIE THURBER

"THE MAYA have always venerated numbers."[2] That ideographic number-writing may have been another Maya numerical achievement is suggested by several pertinent factors.

Every investigator of the text material on Maya stone monuments has had to consider the meaning of the isolated numbers found intermixed with the known and unknown hieroglyphic symbols that make up the inscriptions.

The possible symbolic significance of these numbers has already been voiced by workers in this field. Speaking of glyph Chicchan, Beyer notes, "The numeral *one* is the only number connected with the known occurrences of this hieroglyph, and it may have been used as a *symbol* and not as a counting unit."[3] Cordy states, "Bar and dot numerals are used nonmathematically. . . ."[4] Referring to glyph Been, Beyer concludes, "Thus numbers one, five, ten and the 'steps' must be of similar *symbolic* value."[5] Cordy has advanced another thought: "There are other numeral-forms beside bar-and-dot and head numerals."[6]

That the Maya spoke of their gods by number as well as by name is indicated in the Chilam Balam of Tizimin where the priest states, ". . . Lord *Seven*, is powerful. . . ."[7] This supports the idea that a god's number could be substituted for his identity glyph. Thompson's statements add further credence to this line of reasoning. "The twenty days which formed the Maya 'month' were regarded as gods and were the recipients of prayers. . . .*The numbers* which accompany the days *were* also *gods*. . . ."[8]

1 Arrangement of the material for this report was greatly facilitated by the advice and assistance of Dr Spencer L. Rogers, Scientific Director of the San Diego Museum of Man.

2 Sylvanus G. Morley, *The Ancient Maya* (Stanford: Stanford University Press, 1946), p. 36.

3 Hermann Beyer, *The Maya Hieroglyph Chicchan Derivative* (Middle American Research Series, Tulane University, vol. 1, no. 8, pp. 89-90, 1945), p. 90: emphasis supplied to the word "symbol."

4 N. Cordy, *Examples of Phonetic Construction in Maya Hieroglyphs* (American Antiquity, vol. 12, pp. 108-117, 1946), p. 115.

5 Hermann Beyer, *Maya Day-signs Been and Kan* (American Anthropologist, vol. 33, pp. 199-208, 1931), p. 201: emphasis supplied.

6 Cordy, *loc. cit.*

7 Maude Worcester Makemson, *The Book of the Jaguar Priest, a translation of the Book of Chilam Balam of Tizimin, with commentary* (New York: Henry Schuman, 1951), p. 5.

8 J. Eric S. Thompson, *The Rise and Fall of Maya Civilization* (Norman: University of Oklahoma Press, 1954), p. 232: emphasis supplied.

For purposes of clarification in this report, the numbers of the day-gods will be called "identity-numbers" and the glyphs for the day-gods will be called "identity-glyphs."

The possibility that these identity-numbers may appear in the inscribed texts on stelae seems to be a reasonable conjecture.

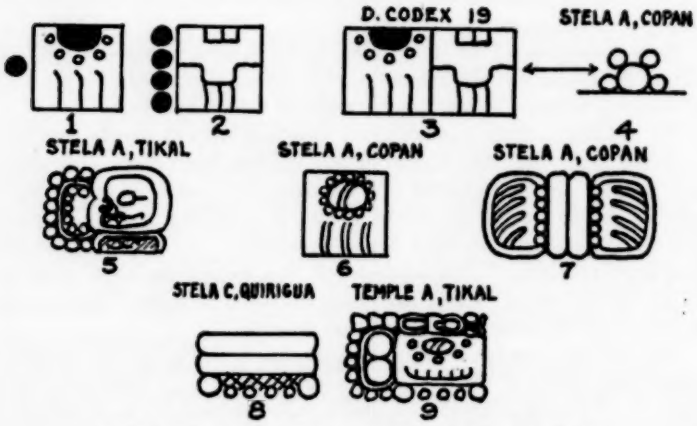

FIG. 1. Examples of ideographic number-writing in Maya inscriptions.

A study of the inscriptions with intent to locate every possible number of this nature, soon gives the impression that the Maya may have employed dots of two different sizes to distinguish individual counts, thus widening the scope of their number-writing.

For example, in No. 1 (Fig. 1) glyph Imix is shown with its accompanying identity-number "one." In No. 2, glyph Kan is shown with its identity-number "four." The Maya frequently paired these two glyphs in a compound glyph as shown in No. 3. If Maya number-writing has been employed in No. 4, then it is possible that Imix has been represented by the one large dot, and Kan by the four small ones. It would seem that the Maya scribe wrote the four Kan dots in smaller size for the purpose of differentiation, so that the reader would not mistake the entire group for a count of "five." This glyph of size-differentiated dots is inscribed on the introductory glyph of Stela A at Copan.

Goodman is of the opinion that, ". . . the most common sign for doubling

[a number] is a line or circle of dots, either of which increases the value of the numeric symbol so qualified twofold."[9] This "doubling" idea does not appear logical when applied to No. 4. It does not seem realistic that the scribe would employ four dots to inform the reader that the one large dot was intended to be "doubled" to two large dots. It would have been far simpler to inscribe two large dots originally.

The factors from No. 4, lead to the first tentative conclusion, that when the inscribed numbers are written in dots only, and the individual groups of sized dots have been defined, then all dots of one size were intended to be counted together.

Further study seems to infer that in their desire to extend their use of number-writing, the Maya at times abandoned their bar-and-dot counting system and wrote large numbers (above "five") with dots alone.

For example No. 5 appears to be a glyph of Cimi, with a prefix of two groups of dots of different size, separated by a dividing line, possibly inserted to avoid confusing the two groups. The outer, larger dots total "ten," and the number would normally have been written with two 5-bars. The inner, smaller dots total "seven," and should have been written with one 5-bar and two dots. It seems possible that to have written these two numbers in the standard bar-and-dot system might have altered the "meaning" of the glyph-block.

In No. 6 is shown what may be a modified glyph of Imix, with a thirteen dot infix. Here, again, the bar-and-dot system would call for writing the "thirteen" with two bars and three dots.

This possible use of number-writing with dots only, for numbers above five, occurs too frequently to have been accidental, and supports the assumption that it was done intentionally to increase the adaptability of numbers for texts.

This leads to a second tentative conclusion, that numbers above five, written with dots only, are to be read for their total count, when the dots are of identical size.

Some of the hieroglyphs suggest that Maya ingenuity in number-writing was extended to employ bars and dots *together*, but as *separate* counts.

In No. 7 two 5-bars are paradoxically flanked with rows of five dots each, thus presenting the number "five" in both bar-form and dot-form, side by side. At first sight, this use of five dots alongside a 5-bar is disconcerting, but further study prompts the conjecture that this employment of "fives" of two kinds in the same glyph is not an error, but a cue that it represents two separate numbers. Thus it seems possible that the two 5-bars were intended for a count of "ten," since they

9 J. T. Goodman, *The Archaic Maya Inscriptions* (Biologia Centralia Americana, Appendix, vol. 4, Text, London, 1889-1902), p. 38.

are paired together, and each five dots was intended as a separate count of "five," since they, in turn, are paired with the comb element at each side. It would be well to recall the dividing line between the groups of dot-numbers in No. 5, since it may be possible that the two 5-bars in No. 7 have been utilized for this separation purpose.

In No. 8 is shown another possible example of number-writing. It seems to indicate that, since the two large dots are the same size as the 5-bars, they were intended to be read with the bars for a count of "twelve." The smaller dots seem to have been sized together for a count of "four."

In No. 9 is shown what may be an excellent example of the extent to which the Maya number-writing was developed, since it possibly represents a glyph-block carrying six numbers in addition to the other symbols.

The largest glyph seems to be a modified Imix with a five-dot infix. The superfix above Imix appears to be a compound modified glyph showing two dots. The prefix at the left is composed of two groups of dots separated by a dividing line. They present a count of "two" and a count of "seven," respectively. The subfix below Imix shows dots of two sizes for a possible additional count of "two" and a count of "three."

It would seem that the glyph-block has been modified by the number-writing method so that it carries two glyphs and six separate numbers. If these six counts represent identity-numbers, then the Maya managed to add six symbol-ideas or "meanings" to the space of one glyph-block that could not have accommodated the six specific identity-glyphs.

Most investigators have encountered the too frequent distortion of text glyphs to make them fit into the allotted space of the glyph-block, which suggests that texts for the stone monuments almost always exceeded the available space for inscriptions, and that every scribe worked under a hazard of space-shortage.

Of the Maya inscriptions, Spinden states, "Juxtaposition of these hieroglyphs together with directive signs and dates would make possible records of considerable accuracy. On many of the monuments the small number of hieroglyphs left, once all the dates have been eliminated, suggests that such an abbreviated system of writing was in vogue."[10] It seems possible that Maya number-writing "shorthand" may have originated through space shortage.

Conclusions. 1. The findings of this report seem to support the possibility that the Maya employed ideographic number-writing in the texts of their stelae in order to conserve space.

10 Herbert J. Spinden, *Maya Art and Civilization* (Indian Hills, Colorado: Falcon Wing Press, 1957), p. 95.

2. There is an inference that each day and month-god had a specific "meaning" equivalent to an idea or thought, and that these "meanings" were conveyed by both the identity-number and the identity-glyph for that god. This may have made possible the interchangeable use of the identity-number or identity-glyph without any change of "meaning" for the reader.

3. There is an indication that the Maya may have employed ideographic number-writing wherever possible, and that when confusion of "meaning" might occur from the use of a god's number among too many other numbers, then the Maya scribe reverted to the god's identity-glyph.

This report is offered in the hope that it will aid in the eventual proof that the Maya employed ideographic numbers.

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JAPANESE USAGES OF TERMS OF RELATIONSHIP

HARUMI BEFU AND EDWARD NORBECK

THIS PAPER presents a discussion of Japanese uses of kinship terms of reference and address. An attempt is made to outline modes of use and to relate them to patterns of interpersonal relationships of Japanese kinship and to the larger context of Japanese social organization.

Data presented here are based in part upon personal observations in Japan on the part of the authors, one of whom (Befu) formerly resided in Japan as a member of Japanese society for eleven years (1936-1947). Additional data were drawn from a program of interviews conducted in 1957 with Japanese nationals registered as students at the University of California at Berkeley. These informants, ten males and ten females, came principally from the largest cities of Japan and were generally members of economically and socially privileged families. Our data thus tend to reflect practices among urban residents of high social class. (Social stratification in Japanese society is yet so poorly described and analyzed that no usable classification is available. Our use of the expression "social class" is very loose.) Because of the youth of our respondents, nearly all of whom were less than thirty years of age and unmarried, information representing their own practices could not be obtained for all categories of relationship. In these cases reliance was placed upon informants' observations of practices among their elders and upon observations of the authors while in Japan. Despite the small size of our sample and other deficiencies which we have noted, it is thought that our data are adequate to permit fairly accurate exposition of major trends of usage within the social classes in question.

Much regional variation exists in Japan in the practices we are describing. Local forms of terms of relationship, sometimes dialectical variants of the forms of Standard Japanese and sometimes distinct terms, are particularly abundant. A partial listing of local forms in a Japanese dictionary of kin terms totals 325.[1] Our discussion is limited to the common terms of Standard Japanese as used in and about Tokyo, especially as they are employed by persons of middle and upper social class. It is useful to note, however, that such information on regional and class differences as is available from informants, personal observation, and pub-

1 Minzokugaku Kenkyuusho, *Soogoo Nihon Mingoku Goi* (6 vols., Tokyo: Heibonsha, 1955-56).

lished accounts indicates that *patterns* if not actual terms are much alike. Thus, our descriptions appear to be applicable in a generalized way to all geographical areas and social strata.

We may note also that many "fictive" usages of kin terms are followed in Japan. Terms of relationships are used in addressing ritual kin, friends, and strangers. These practices are extensive and varied, and they require separate treatment. The concern here is limited to standard uses of relationship terms of reference and address for (1) one's own relatives, and (2) terms of reference to the relatives of other persons.

Categories of kinship dealt with here consist of close lineal, collateral, and affinal relatives, as indicated in the headings which follow. Informants were subjected to a series of lengthy interviews involving the use of questionnaires. Usages of kin terms among relatives during both childhood and adulthood were recorded, with emphasis given to adult practices. Special attention was given to relative social statuses of speaker, addressee, and referent, and to the degree of intimacy or social distance existing among them. Sex of speaker, addressee, and referent were also taken into account, and differences of usage as determined by these considerations appear to be many. Our sample is, however, small and we have therefore confined our statements in this connection principally to patterns which appeared to be strongly and repeatedly indicated.

SOME FEATURES OF JAPANESE KINSHIP AND KINSHIP TERMINOLOGY

In accordance with Spier's classification,[2] the Japanese system of kinship terminology is of the Eskimo type. Descent is reckoned bilaterally. Paternal relatives tend to be more important, but the paternal and maternal sides are terminologically symmetrical. Categories of kinship recognized by referential terms are essentially the same as in the American system of reference, with the major exception of a terminological distinction in the Japanese system between younger and elder among siblings of ego's own generation. Terms of address are ordinarily used only toward relatives older than the speaker and are limited to terms denoting grandfather, grandmother, father, mother, uncle, aunt, elder brother, and elder sister. (Terms of address for great-grandfather and great-grandmother also exist, but occasions for their use are few and they have been omitted from discussion here.) Relatives younger than the speaker are ordinarily addressed by personal name. In addressing each other, husband and wife use a distinctive set of terms which do not directly

2 Leslie Spier, *The Distribution of Kinship Systems in North America* (University of Washington Publications in Anthropology, vol. 1, no. 2, 1925).

denote kinship and which may be used in other social contexts. Close affinal relatives older than the speaker are addressed by terms of the foregoing group complementary to those of their spouses or other connecting relatives. It is useful to add that kin of the genealogical statuses indicated by this list of terms and close affinal kin are customarily addressed by these relationship terms. Other affinal relatives, first cousins, and more distant collateral relatives may or may not be addressed by terms of relationship. If kin terms are used in addressing these relatives, selection is made of terms in our listing which best suit the age or kinship status in one's own household of the person addressed.

The referential system is much larger than the vocative system and differs greatly in both terms themselves and patterns of use. It embraces all of the terms of address, which may be used referentially in certain social contexts, and also provides a variety of strictly referential terms for every status of kinship ordinarily recognized. Thus, the referential system includes terms denoting relatives — those younger than the speaker, affinal relatives, and certain collateral relatives — for whom no kin terms of address indicating the genealogical or affinal statuses exist.

For convenience in description, the whole overlapping complex of vocative and referential terms may be classified under the following headings:

Types of Japanese Kin Terms

I. Terms of reference only
   a. Denoting speaker's kin
   b. Denoting kin of addressee
   c. Denoting either of the above

II. Terms of address-reference
   a. Children's forms
   b. Adults' forms
   c. Epistolary forms

Strictly referential terms (category I) are nearly always etymologically distinct from terms of address-reference (category II). Terms of address-reference are primarily terms of address which are used in reference under certain circumstances. The relatively few terms derived from common roots which appear in both categories I and II are rendered distinctive as terms of address or of reference by the addition or omission of honorific particles of speech. Certain terms also appear in more than one sub-class.

Strictly referential terms for a single status of relationship are frequently multiple. Variants of a common root are formed by addition of deferential elements of

speech, of which the most common for this usage is the prefix *go-*. Referential terms also often include alternates which are not derived from common linguistic roots. Sub-types *a* and *b* of category I are generally quite distinctive from each other in linguistic roots, additives, or both. Sub-type *c* applies only in social contexts of intimacy between speaker and addressee and is comprised of certain terms of sub-types *a* and *b*.

Terms of category II used in speech (sub-types *a* and *b*) are basically forms of address; in formal situations their use in reference, especially to one's own kin, is considered somewhat improper. As we shall see, however, these terms see frequent use in reference. Unlike the strictly referential terms, these forms of address consist of complexes built about a single linguistic stem for each of the four pairs of kinship statuses which they denote — grandparents, parents, parents' siblings, and elder siblings. Variants connoting social distinctions applying between speaker and addressee are formed by deferential affixes, the prefix *o-*, and/or one of the suffixes, given in ascending order of deference and formality, *-chan*, *-chama*, *-san*, and *-sama*. Distinctions between children's and adults' forms depend upon the affixes characteristically used and upon the use or non-use of diminutive-like forms. Children characteristically use the less formal suffixes *-chan* and *-chama* and may omit the prefix *o-*. Adults most frequently employ the more formal variants, but may retain childhood usage for certain close relatives. Children tend more than adults toward phonetic modification of terms so that they take on the flavor of diminutives; e.g., for father, *totchan* (child) versus *otoosan* (adult). Children seldom know or use the strictly referential terms and use terms of address as terms of reference.

In address, the individual customarily uses for each kinsman only one of the variant forms of a complex, changing the variant to a more formal term after he has passed childhood. In reference, he uses a variety of terms dependent upon differentials of status applying between himself, the addressee, and the referent, and upon the degree of formality of the occasion. Of the total number of alternate (i.e., etymologically distinct) and variant terms of address and reference, the individual characteristically chooses a limited set which he uses habitually. Individual variation in choice is extensive but it appears to fall within clearly distinguishable if overlapping boundaries determined by social status along the lines of social class, position of authority in the family, age, and sex.

Epistolary forms, which must include terms of address as well as reference, bridge all other classes. They are, however, distinctive by their formality and include terms never used in speech.

A discussion follows of characteristic uses of kin terms of address and reference

for one's own relatives and terms of reference for the relatives of unrelated and distantly related persons. Most categories of relationship are treated in pairs by sex because generally no great difference exists in patterns of usage whether the relative of address and reference is male or female. (Sex of the speaker is a much more important consideration.) General patterns of use are also much the same for all statuses of kinship under discussion here, and we have therefore selected for detailed discussion the single pair of father and mother, the categories for which all informants were able to provide detailed information on their own practices. In discussion of terms for other kin, attention will consist chiefly of comparison to point out differences.

SPEAKER'S LINEAL RELATIVES

Parents:

As with other categories of relationship, an individual ordinarily uses only one of the many variants of the basic term of address for each of his parents. Most individuals use one variant in childhood and another and less intimate variant after they have become adults. Some children are taught in childhood to use an adult form, and some adults preserve usage of the intimate form they used in childhood. Whichever single variant a child uses, this term serves in all social contexts — in address and reference to his own parents and in reference to the parents of others. Change to adult usage most commonly begins when one enters school at the age of six, and adult practices have generally supplanted those of childhood by the time adolescence is reached. As the social horizon of the child enlarges, he becomes aware by instruction as well as by observation of practices of his peers and elders that the etiquette surrounding terms of kinship is elaborate and involves many forms of address dependent upon a variety of social variables.

Choice of the single variant used in address by either child or adult is correlated with social class although considerable overlap in characteristic terms exists among classes. Persons of low class generally tend to make greater use of the less formal terms, and adults of low class status may use variants considered appropriate only for children of higher social class. Informants were explicit in labeling social class (that is, familial pattern of use as allied with social class) as the determinant of choice and in denying any determinative effect to degree of intimacy. This is in contrast with the American practice as reported by Schneider and Homans[3] whereby choice of term, such as "father," "dad," or "daddy," is determined by the degree of familiarity one feels toward the relative in question. Schneider and

3 D. M. Schneider and G. C. Homans, *Kinship Terminology and the American Kinship System* (American Anthropologist, vol. 57, pp. 1194-1208, 1955), pp. 1197-1198.

Homans do not, of course, deny that patterns differ according to social class; we interpret their statements to mean that within a given social class the principal determinant of choice is degree of intimacy. Our Japanese informants consistently, and sometimes emphatically, denied that choice of term depended upon attitudes of intimacy they felt toward their parents or upon force of parental authority actually exercised. Although variants were admittedly different in connotations of formality, whether one called his father *otoochan, otoochama, otoosan,* or *otoosama* or any other of the variants appropriate to their social class was said to give no indication of the intimacy of their interpersonal relations or of the degree of authoritativeness of the father. Informants appeared, in fact, unwilling or unable to think that differentials of intimacy entered in any way to determine intraclass differences in usage; that is, to influence choice of characteristic variants by social class for a single category of relationship. Their view appears to be that usage of terms — it could hardly be called choice — is only a matter of etiquette. A loosely defined range of variants is permissible and proper for them, but certain of the terms used by persons of lower class are improper as violations of rules of etiquette and because they are the insignia of lower social class.

In spite of these consistent denials by informants, certain historical factors invite the hypothesis that variant forms of address, insofar as they are class-aligned, do indeed indicate differential degrees of intimacy. Hierarchically arranged personal relationships ideally demanding respect, unquestioning submission, and undivided loyalty on the part of the subordinates, and obligations of protection and support on the part of the superordinates have been established in Japan at least since the beginning of the feudal period in the twelfth century. Instituted first among the nobility and the warrior class, interpersonal relations formed along these vertical lines slowedly spread in diminished strength to lower social strata. Chinese-derived Confucian ethics of interpersonal relations served strongly to reinforce this form of social arrangement, and Confucianism, long important in this respect, was finally adopted as the official doctrine of the warrior class during Tokugawa times (1603-1868). Prevalence and strength of hierarchical social relations of this sort appear, however, always to have followed lines of social class. Among urban residents of the lower social strata and among rural peasants, who were little affected by Confucian ethics and among whom relationships of this kind were less vital or even inimical to effective economic coöperation, familial relations and all other interpersonal relations were both more egalitarian and more intimate. Confucian values did not strongly penetrate to the plebeian classes until the second half of the nineteenth century, when governmental indoctrination to instill emperor-centered nationalism made use of them. Even under this impetus the Con-

fucian ideal of intra-familial arrangements was only imperfectly developed among members of the lower social strata.

In light of the foregoing and such information as is available on class differences in practices of using kin terms, it seems probable that parent-child and other familial relations become more intimate as one descends the social scale — but we have insufficient data to make more positive statements.

Distinctions which apply in children's and adults' usages also strongly suggest that intimacy is an influencing factor in change of terms. Interpersonal relations with one's parents and other close relatives are at their greatest peak of intimacy during childhood, and the terms of childhood as contrasted with those of adulthood may reasonably be interpreted as reflecting this intimacy. As we shall also see, certain adult usages lend themselves best to interpretation as reflecting circumstances of intimacy or as implying strong emotional bonds between the relatives involved. Informants are undoubtedly correct in stating that "choice" of variant is a matter of following familial pattern, which in turn follows customs of social class. We should prefer, however, to amend their statements and interpretations to read: within a given social class and within the separate boundaries of childhood and adult usages, intimacy is not a powerful determinant of choice of term for a single status of kinship.

Sex of the speaker usually has little bearing on the variant selected for father, mother, or any other close relative. With one curious and interesting exception which appears further to belie informants' statements concerning the role of intimacy, brothers and sisters generally address close relatives by identical terms. In childhood, sons and daughters may or may not use a child's form in addressing their father but they follow a common pattern; in adulthood (invariably, among our informants) both use an adult's form. In addressing the mother, however, males among our informants invariably indicated use of a child's form during childhood whereas females might use either; in adulthood all females used an adult form but two males of ten retained the use of a childhood form. These practices suggest that the relationship between mother and son is more intimate than that between mother and daughter, but we have no data derived from other sources to support this idea. It seems probable that these customs reflect no differentials of intimacy but rather the greater permissiveness of mothers with sons; daughters are trained to evince greater formality and deference to their superiors.

Circumstances surrounding choice among alternate and variant terms of reference differ considerably from the foregoing. Degree of intimacy between speaker and addressee is an important consideration, as is relative social status. The term

of reference for father and mother used in the presence of other close relatives is the same as that used in address. In speaking to relatives outside the household and to unrelated persons, terms of reference for one's parents generally differ not only from the intra-familial forms but differ also within the category of strictly referential terms, dependent upon situational context. If one is intimately acquainted with a distant relative or unrelated person, the customary term of address for his own parents may also be used in reference to them. But the terms of address connote intimacy (as well as respect), and for this reason it is inappropriate to use them in the non-familial world. Outside the family one should avoid the self-appreciation implied by the use of the deferential terms of address for his own relatives, and he should also avoid the display of emotion — in this case, the affective bonds which are implied by the terms of address.

Discussion at this point presents a dilemma with respect to definitions of the words "formality," "informality," "intimacy," and "deference." Terms of address are eminently deferential but through familial use they have come to take on connotations of intimacy; in particular, they express affect. Intimacy, however, does not deny formality except insofar as the meanings of the two words partially coincide, and intimacy does not deny respect or deference. Strictly referential terms are "formal" in the sense that prescribed rules govern their use. Those used for the relatives of an unrelated person are generally deferential and non-intimate; those used for one's own relatives are also non-intimate but they include both deferential and non-deferential terms. Intimacy is connoted by these strictly referential terms for own relatives only in the sense that the non-deferential terms among them express familiarity or license; these terms do not connote emotional ties.

In conversation with relatives outside the household and unrelated persons of the parental generation or of higher social class with whom the speaker is not intimately acquainted, he generally refers to his father and mother by the "formal" referential terms *chichi* and *haha,* devoid of honorific additives. With intimate acquaintances among these persons, male speakers tend to use the undeferential terms *oyaji* and *ofukuro,* which connote a great deal of familiarity and bear tones of near-flippancy under these circumstances. Females, who are expected to show greater respect and formality in social relations, make very little use of these latter two terms and instead employ *chichi* and *haha* even with intimates. Deference and formality in these social situations apply not only to the relatives who are the subjects of reference but also to the addressees; that is, addressees are shown deference by use of the more formal terms in referring to third persons.

In speaking to inferiors in age or social status, males may use either *chichi-haha* or *oyaji-ofukuro.* Females again use the more formal of these two sets of terms.

Sex of the addressee and referent appears to exert little influence on the choice of term.

We may note from the foregoing that selection of terms for extra-household use depends principally upon two factors, differences in social status and the degree of intimacy which applies between speaker and addressee. Relative intimacy between speaker and referent (his relative) appears to be largely irrelevant. Of the two factors, social status appears to be the more influential. Sex of the speaker (but not, so far as our data reveal, of the addressee or referent) also functions to determine choice; trends along these lines may be summarized by the statement that females lean toward use of the more polite and deferential terms in contacts with the outside world.

It is important to note that the most common practice of reference to one's own parents or to any other relatives within one's household includes prefacing the terms of kinship with the expression *uchi no* "of (our) (my) (the) house (hold)." For the sake of intelligibility and conformance with English usage, these words are customarily translated simply as "my." Literal translation, however, serves as an illustration of the sharp difference between the American and the Japanese family in the matter of individualism versus group unity.

Grandparents:

Terms of address for own grandparents afford the outstanding example of retention of the usages of childhood. Many adults continue to use the diminutive-like children's variants (the suffixes *-chan* and *-chama,* i.e. *ojiichan, ojiichama; obaachan, obaachama*). These circumstances strongly suggest the influence, denied by informants, of patterns of authority. Relationships between grandparent and grandchild are traditionally both intimate and permissive, and the suffixes in use reflect this relationship. We may note that the same suffixes — appended to the given name — are used by all household members in addressing children. It is interesting to note also that old age is traditionally likened to childhood in Japan; both the young and the aged are theoretically free of responsibility; both are given considerable license in behavior, and terms of address for both are similarly intimate in tone.

Sex differences among speakers and among addressees were not reflected in our data on terms of address; paternal and maternal grandparents were reportedly addressed in identical fashion by both male and female grandchildren.

Referential terms for grandparents essentially follow the pattern described for parents. Terms of address are used referentially in conversing with household members and other intimates. As compared with usages for parents, the major

difference noted is correlated with the sex of the speaker: males tend toward use of the intimate terms of address *(ojiichan, ojiichama* and *obaachan, obaachama)* as referential terms even in extra-familial social contacts, and especially in the presence of social equals and age-mates. Females show a much greater tendency to use the more "proper" and strictly referential *sofu* and *sobo*.

In other respects terms of address and reference for grandparents follow the patterns described for parents.

Children:

Personal names serve as the central element of terms of address for son and daughter, but patterns of address by father and mother differ and thereby give indication of the authoritative role of the father as compared with the intimately permissive role of the mother.

Mothers most frequently add the intimate suffix *-chan* to the child's given name. Another common and still more informal practice of mothers is to use only a part of the name so that a true diminutive is formed; e.g., "Yaeko" is made into "Yatchan." These practices may persist into the adulthood of the erstwhile children. Some fathers also employ these intimate forms of address but their tendency is toward use of the given name without suffix.

As with other categories of relationship, reference within the household and among intimate friends coincides with terms of address. With acquaintances to whom this form of reference conveys meaning, the personal name without suffix is used. In the presence of strangers and social superiors, the strictly referential terms *musuko* (son) and *musume* (daughter), which incorporate no deferential additives, are generally used. Reference under these circumstances also frequently indicates order of birth of both sons and daughters by use of a series of exclusively referential terms (*choonan*, eldest son; *choojo*, eldest daughter; *jinan*, second-born son; *jijo*, second-born daughter, etc.)

Grandchildren:

Practices of addressing grandchildren are much like those of addressing children except that the grandfather, who is not a figure of authority like the father, tends strongly to the same usage as his spouse (i.e. mothers' terms for children). Thus intimate forms prevail, and reflect the nature of the social relationships between grandparents and children.

Grandchildren are not distinguished by sex in kin terms of reference. Instead, a single strictly referential term *(mago)* is used. Practices of reference follow the pattern applying to children except in the matter of order of birth. When this dis-

tinction is desirable or necessary, it must be made by verbal means other than kin terms.

SPEAKER'S COLLATERAL RELATIVES

Parents' Siblings:

Siblings of one's parents are generally addressed by the more formal of the range of variants for this status of kinship; i.e. as *ojisan-obasan* or *ojisama-obasama*. Even among children, the more intimate suffixes *-chan* and *-chama* see less use for parents' siblings than for any other class of lineal or collateral relatives for whom kin terms of address exist. (It is to be remembered that the range of kin terms of address is confined to ten genealogical statuses, five pairs differentiated by sex.) Intimacy appears in this case clearly to influence choice of terms when comparison is made with usages for other kin from the standpoint of relative formality or deference expressed. Interpersonal relations with parents' siblings are normally less close than with lineal relatives, and the suffixes in use correspond with these circumstances. But informants themselves were able to provide little light on this subject.

Terms used strictly in reference are limited to two, *oji* and *oba*, which consist of the stems only of the terms of address. When the number of parents' siblings makes use of the kin terms confusing, it is customary to add the given name, the surname, or the place of residence before the kin term in both reference and address.

Patterns of use of all terms generally conform in other respects with those for parents.

Own Siblings:

Variant forms of address in frequent use for elder siblings exceed in number those for any other category of relationship. This circumstance is easily understood as reflecting the narrowness of the social breach between siblings as compared with the gap between speaker and other relatives for whom kinship terms exist. Common variants reported for elder brother were: *niichan, niichama, niisan, niisama, oniichan, oniichama, oniisan,* and *oniisama*. Corresponding variants for elder sister are formed about the stem *nee*. These variants are precisely twice as numerous as those in frequent use for other categories of relationship. Doubling arises from the fact that one series of four terms lacks the honorific prefix *o-*. (Parents and grandparents are also sometimes addressed without the use of this prefix, but the practice is relatively uncommon.) Less elevated socially than par-

ents, parents' siblings, and grandparents, elder siblings may be addressed by terms which are less deferential.

It is also noteworthy that kin terms are not always used in addressing elder siblings. Some persons use personal names, especially if the difference in age is small. To what extent intimacy enters as a determinant is unclear; informants gave interpretations on the basis of differentials of age. This practice appears to be a recent development, and may thus be a reflection of the democratization of Japan and the weakening of the hierarchical social structure of the traditional Japanese family.

Customs of reference to elder siblings are closely similar to those for parents. Terms of address are used for reference in familial circles. When it is necessary to distinguish between two or more elder siblings, it is customary to add the given name to terms of reference (and also address). Two sets of strictly referential terms (*aniki-aneki* and *ani-ane*), the first term of each set familiar and second formal, exist and are used in essentially the same fashion as their counterparts for parents. The principal divergence is that the term *aneki* is used much less frequently than its male equivalent. Reasons for this differential in use are unclear.

Younger Siblings:

Younger siblings are addressed in the same fashion as children, by means of part or all of the personal name to which a suffix is usually added. Forms of childhood tend to be retained after maturity. A single pair of strictly referential terms *(otooto* and *imooto)* exist. In all other respects, customs of reference and address follow the general patterns described for other kin and correspond most closely with those for children and grandchildren.

A term of reference, *kyoodai*, which merges male, female, younger, and elder siblings is also in use. This term is best translated as "children of the same parents" because it includes the speaker (e.g., if a person in referring to his own family speaks of "five *kyoodai*" he means to say that he has four siblings). Dependent upon context, this term may also mean only brothers or only sisters. When used in speech (see Epistolary forms) it denotes brothers more frequently than sisters, for whom a distinctive term, *shimai,* is also used.

Cousin:

No kin term of address which denotes the status of cousin exists. Cousins are most commonly addressed by personal name with the addition of either the suffix *-chan* or *-san*. The most formal of the child's and the adult's suffixes (*-chama* and

-sama, respectively) are little used. One of the variant forms denoting elder sibling is sometimes used in addressing cousins older than the speaker. Outside intimate circles, where personal name is used, reference by means of the purely referential term *itoko* (cousin) is employed.[4] Usages in other respects generally conform with the patterns previously described.

SPEAKER'S AFFINAL RELATIVES

Spouses:

Terms of address of the Japanese husband and wife vis-à-vis each other, like those in use in the United States, are not properly or exclusively kin terms but may be used outside the realm of kinship. (We must make exception here of the very common Japanese practice among spouses of addressing each other from the viewpoint of children by the kin terms of address for father and mother.)

Terms used by man and wife differ greatly. A man most commonly addresses his wife with the term *oi,* roughly equivalent to the English "say" or "hey," or with the term *omae,* a word customarily translated as "you," which is used exclusively toward social inferiors of either sex. Wives may also be addressed in similar fashion by the term *kimi,* which today is otherwise used to address social inferiors, male or female, and is also sometimes used among intimate male friends, especially students, in addressing each other. This term connotes intimacy and/or license. Personal name without suffix is also employed, and the wife who is the mother of children may be addressed by the children's term for her.

Among close relatives and intimate friends men refer to their wives by personal name, and may follow the teknonymous practice of calling her "mother." Outside these intimate circles men use a variety of terms of reference, none of which may be used to denote the wives of other men. These include *kanai* (the most common), *nyoobo,* and *tsuma,* all of which are conveniently translatable only as "my wife," and also the terms *kore,* "this," and *are,* "that." Among the families of our informants some use was also reported of *furau* (from the German) and *waifu* (from the English).

A wife addresses her husband with *anata,* "you," a term which is otherwise employed referentially by both sexes in conversation with unrelated social equals and superiors in much the same fashion as English usage of the pronoun "you." (The occasional male also uses this term in addressing his wife.) A wife might also address her husband with the vocative *chotto,* "one moment," a term sometimes

4 In some areas of Japan this term is variously employed to address related and unrelated persons with whom one is intimate and to address unrelated young women (K. Yanagita, ed., *Zokusei Goi,* Tokyo: Nihon Hoori Kenkyuukai, 1943, pp. 73-74).

used by persons of either sex to catch the attention of strangers, but she never uses the much ruder *oi*. Women with children tend strongly to address their husbands from the eyes of their children with one of the variants for father and to use the same term in intra-familial reference to him.

In extra-familial social situations wives refer to their husbands by a number of referential terms and expressions which hold in common the fact that they indicate the central position of the husband in the household. The most common term is *shujin*, "master." Other forms include *taku*, "(my) (our) house," *uchi no hito*, "the person of (my) (our) house (hold)," and use of the surname without deferential suffix.

Parents-in-law:

Parents-in-law are addressed and, within family circles, referred to by one of the variant forms for parents. Choice of variants tends to be somewhat more formal than for genetic parents.

In reference outside the household, several formulae are followed. One may describe the relationship by such means as saying the equivalent of "my wife's father" (using referential terms) or he may less frequently use an expression *giri no otoosan (okaasan)*, "courtesy" or "obligatory father (mother)," which makes clear the affinal nature of the relationship. Under the most formal circumstances, as when conversing with strangers or while in the presence of social superiors, the strictly referential terms *gifu* and *gibo* are used. Two additional referential terms, *shuuto* and *shuutome*, also exist but they are considered unflattering and their use is restricted principally to reference to parents-in-law of third persons.

Siblings-in-law:

Age status and household status enter as determinants of vocative nomenclature for siblings-in-law. The spouse of an elder sibling is usually addressed by one of the variant forms of address for elder siblings. As with parents-in-law and parents, selection tends toward somewhat more formal affixes than are used for genetic siblings. A less common co-existing trend — more strongly marked than its counterpart among genetic siblings — is to use personal names with the deferential suffix *-san*. This practice occurs most frequently when the spouse of an elder sibling is younger than the speaker, a circumstance which often applies to sisters-in-law. The wife of the eldest son and heir, when younger than the speaker may, however, be called "elder sister."

Spouses of younger siblings are generally addressed by personal name. The suffix *-san* is usually added but might be omitted. If the spouse of a younger sibling

is superior in age to the speaker, as often applies to brothers-in-law, one of the variants for elder sibling might be employed. Even under these circumstances, however, personal names predominate for these persons.

Terms of extra-familial reference conform with the patterns for all other kin, and again, diverge only in detail. Reference to spouses of siblings is by means of the terms of reference for genetic siblings except when it is desirable or necessary to indicate that the relationship is affinal. The expression *giri no,* which indicates affinal status, may preface the kin term, or the relationship may be described. A new bride might be referred to (by all members of the household) as "the bride of our household." In formal situations the terms *gikei* and *gitei* (elder brother-in-law and younger brother-in-law) are appropriate for the husbands of one's sisters, or the surname without suffix may be used; no equivalent terms used in speech exist for wives of one's brothers (see Epistolary forms).

Terminological distinction according to age status from another point of reference is evident in still another set of terms, *ko juuto* and *ko juutome,* which denote spouses of either elder or younger siblings. Usually rendered in English simply as "brother-in-law" and "sister-in-law," these terms are more accurately translatable as "small father-in-law" and "small mother-in-law." Like the forms from which they are derived, these terms carry ill connotations and tend to be used only in reference to siblings-in-law of persons who are not present.

RELATIVES OF UNRELATED ADDRESSEE

In reference to kin of an unrelated person while in his presence, it is considered proper to employ the most formal of the strictly referential terms. Distant relatives with whom one is poorly acquainted may be treated in the same fashion as unrelated persons. But many breaches are made of this rule. Dependent principally upon the social relationships of speaker and addressee, terms of address may be used in reference and the less formal referential terms are also employed. In general we may say that the less the social gap and the greater the intimacy between speaker and addressee, the greater the tendency to use familial forms.

Patterns of usage also follow lines of sex. Among intimate male friends, undeferential terms of reference, properly used only for one's own kin (e.g., *oyaji* and *ofukuro*), may be used in reference to each other's kin. Regardless of the degree of intimacy applying between female speaker and addressee, the two terms cited above for parents are never used, and female speakers generally tend toward employment of the most deferential terms of reference.

Many terms of reference for own kin are transformed to convey the meaning of addressee's kin by the addition of honorific particles of speech. With these additives, the terms cannot be understood to mean one's own kin. Thus, for exam-

ple, *musuko* (my son) becomes the son of the addressee when it is rendered *omusukosan.*

Among all categories of relatives, grandparents are most frequently referred to by terms of address. These terms have, in fact, come to connote old age as much as genealogical status; any old person, including a total stranger, may be addressed and referred to by one of the terms of address for grandparents.

In addition to the terms of reference discussed above, a group of etymologically distinct terms denotes relatives of an addressee unrelated to the speaker. These terms are limited in modern usage almost entirely to the kin statuses of husband, wife, son, and daughter. Deferential to the point that many are now regarded as old fashioned and unnecessarily flowery, most of these terms find little use except under circumstances of unusual formality. The husband of an addressee might be referred to as *dannasama,* "honorable master" (once a term of address for one's employer or master) and *goteishu,* "honorable master." Wives are commonly referred to as *okusan* or *okusama,* and less commonly by a group of terms including *saikun, kamisan,* and *okamisan.* These terms are deferential but they do not denote the high social altitude of the two terms cited for husband. A very large number of these highly deferential terms exist for both son and daughter; they convey the meanings "your son" and "your daughter" and cannot be used in reference to one's own offspring.

An addressee's husband might also fairly commonly be referred to by use of his surname with the suffix *-san* or *-sama;* wives cannot be referred to in this manner.

EPISTOLARY FORMS

Forms of salutation in letters to relatives are ordinarily the terms of address of customary speech. If the relationship is not intimate, as among certain affinal relatives, the salutation may consist of a term of address more formal than the vocative normally employed for the relative in question. Signature is by name unadorned by affix.

Epistolary reference to one's own relatives and relatives of the addressee follow the general patterns applying to vocal usages. In writing to relatives and intimate friends, reference to own relatives may be by means of the normal terms of address. Epistolary forms tend, however, toward extreme formality. Except in correspondence with one's intimates, formal terms of reference are used. These are commonly rendered still more formal by the addition of honorifics, and epistolary references to kin include terms rarely if ever used in speech. All of these terms were once employed in speech, but they are now regarded as too formal for any occasion but correspondence and their use for even this purpose appears to be waning. The greatest extremes of formality and deference apply to relatives of greater age

status than the writer — the referential term father *(chichi)* may, for example, be transformed by additives to *chichiuedono,* "father-superior-lord." As a general rule, the most formal of the epistolary forms are used for the addressee's kin, but a degree of formality improper in speech may be expressed in written reference to one's own relatives. A counter trend also applies in reference to one's own relatives. Use is sometimes made of extremely depreciative terms, such as *gusai,* "(my) stupid wife," and *gusoku,* "(my) stupid son."

In a few instances, written forms of terms of reference convey meanings which the spoken word alone, divorced of context, cannot express. Siblings (*kyoodai*) may be distinguished in writing as brothers or sisters by use of different characters. Two characters of a possible range of four (elder brother, younger brother, elder sister, younger sister) are used in writing this term; when the intent is to indicate sisters, the characters for elder sister and younger sister are used — and may be read either *shimai* (sisters) or *kyoodai.* It is thus also possible to indicate any combination of two of elder and younger brothers and sisters. The characters for elder brother-younger brother are used to denote all siblings without distinction by sex, but it is sometimes desirable to write all four characters to convey this meaning clearly (and the reading is then *kyoodai-shimai*). The referential terms *gikei* and *gitei* used in speech for elder brother-in-law and younger brother-in-law have written (but not vocative) female counterparts in the terms *gishi* and *gimai.*

SUMMARY AND CONCLUSIONS

By way of summary, it is useful first to make a few comparisons between Japanese and American terms and usages. If graphically demonstrated by kinship charts, the referential systems of both societies are much alike in the relatives whom they distinguish and merge. Categories of relatives for which terms of address exist are also few for each society, and with the major modern exception of some American use of the term "cousin" they apply in both societies to persons older than the speaker. But mere listing of terms on kinship schedules conceals more that is significant than it reveals. Examination of manners and circumstances of usage points up differences of many kinds. A noteworthy distinction, only poorly brought out by our data, is that the Japanese make far greater use of their inventory of terms of address, generally using them for affinal relatives and frequently addressing distant relatives and strangers by these terms denoting close genetic relationship. Intimacy enters as a determinant of forms of address and reference in both societies but in fashions which have different emphases. The Japanese systems of reference and of address differ very markedly from each other; the American counterparts differ from each other much less.

Many additional differences which reflect the nature of Japanese values and the ordering of Japanese society as distinct from that of America may be seen. We may take special note of these characteristics of Japanese usages:

1. Choice of alternate terms and variants of terms depends upon considerations of relative social status, degree of intimacy of speaker and addressee, patterns of authority applying between relatives, and the formality of the occasion. Dependent upon the situation, these factors operate in various fashions and in various combinations.
    a. Within a given social class, degree of intimacy with the relative in question appears to exert small influence on the choice of terms of address and reference within the range for a single category of close kin. Class patterns differ, and suggest that intimacy of relationships between relatives increases as one descends the social scale.
    b. Intimacy appears to be a more forceful determinant when usages for different categories of relatives are compared. Collateral and affinal relatives tend to be addressed and referred to by terms with affixes which indicate social distances greater than those applying between close relatives, and affixes for genetic relatives also differ along these lines (see *c* below and 3, *a*).
    c. Special relations of intimacy and prevailing patterns of authority are reflected in terms for genetic relatives. In addressing offspring, mothers make great use of diminutives and intimate suffixes whereas fathers use less deferential and less intimate forms of address. Usages of childhood as compared with those of adulthood appear to be correlated with differentials of intimacy applying during those periods of of life. Retention of childhood forms of address for grandparents is in keeping with their permissive roles toward grandchildren. The tendency by males toward retention of childhood forms of address for the mother but not the father is in keeping with maternal and paternal roles.
    d. In extra-familial usage, intimacy and comparative social status of speaker and addressee and formality of the occasion co-exist as prime influences in choice of terms for both own relatives and relatives of addressees. Intimacy between speaker and referent is largely inconsequential. Determinants of choice of terms are multiple and individual patterns of use are correspondingly multiple.

2. The importance of familial ties and the status of the household as a closely integrated unit to which the individual is subordinated (as is inferrable from data other than uses of kin terms) is reflected in both customs of address and reference.

    a. Terms of reference for own relatives within the household are frequently prefaced by the expression "of our household," and terms of reference for relatives of unrelated persons also often include expressions of this kind.[5]

    b. Terms of reference for husband emphasize his dominant position in in the household.

    c. Terms of relationship are consistently used in address and reference for key personnel of one's own household and are frequently used in reference to relatives of an unrelated addressee.

    d. Terms of address are limited entirely to genealogical statuses which commonly exist among members of households.

    e. Household status may override status by age as a determinant of kin term.

3. Status differences of several kinds are evident in patterns of usage.

    a. Age status is strongly reflected in terms of address, but it does not operate as the sole determinant of choice of term. Familial or household status is intimately allied with hierarchical status by age. One's age implies a certain familial status of superiority or inferiority with reference to the relative speaking. When relative status by age and actual familial status do not coincide in superiority or inferiority, either age or familial status may be reflected in terms of relationship employed. (Terms of address, as terms of respect, denote only persons older than the speaker. Variants [i.e. affixes] for elder siblings and their spouses are less deferential than those employed for relatives of parental generation and for grandparents. Younger siblings' spouses whose ages actually exceed that of Ego may be addressed either as elder siblings or in the manner of younger siblings.)

    b. Patterns of extra-familial use of kinship terms reflect hierarchical social distinctions between speaker and addressee which include but go beyond age status and allied household status of these two. In the

5 Terms of address for strangers are often also kin terms and may be regarded as reflecting the household statuses of the addressees.

presence of social superiors as determined by class affiliation or other factors which bestow eminence, terms of reference for own relatives tend toward the pole of greatest formality but are deferential to own relatives only in the sense that they are formal. Under similar social circumstances, terms of reference for relatives of the addressee represent extremes of both formality and deference.

c. Status differences between males and females are revealed in both terms of reference and address denoting each sex and in characteristic patterns of usage of terms by sex. Although intra-familial usages of and for males and females of the same generation and similar kinship status often coincide, females otherwise use more polite and deferential terms which are in keeping with their lower status. Terms of address and reference of husband and wife for each other strongly indicate the dominant position of the male. (Our data also suggest that males use a considerably wider range of terms of reference for own and addressees' relatives, a circumstance which might be regarded as reflecting their relatively greater role in the external world.)

We may also note that, as an important element of etiquette, terms of kinship and their usages are in full and expectable accord with the intricate patterns of Japanese etiquette as revealed by observation of other forms of behavior in interpersonal relations. Many nuances of social status and situation are connoted by the wide variety of terms; traditional practices of depreciation of one's household and oneself and exaltation of the addressee are given free opportunity for expression in the reservoir of kin terms, and the traditional pattern of avoiding expression of emotion except with one's intimates extends into the sphere of kinship nomenclature.

The practices we have discussed here have repeatedly and prominently outlined a dominant theme in Japanese social structure, the hierarchical arrangement of social relationships. The realm of kinship is in all societies a highly important aspect of life in which the individual participates from the time of his birth. Manners of usage of terms of relationship — the symbols for the interpersonal relationships applying among kin — provides a body of data reflecting fundamental attitudes and values which are repeatedly given expression. It is not surprising that Japanese usages of terms of relationship strongly reflect the nature of Japanese society.

In conclusion, a word on trends of change in use of kinship nomenclature appears in order. Japanese culture and society have changed greatly during the past

century. It is clear that the bonds of kinship have weakened in functional significance as impersonal agencies accompanying industrialization have arisen to meet human needs once served by kinship. The size of the effective kin group in Japan has diminished greatly during this period and ritual kinship has also diminished in incidence and importance. At the same time, both intra- and extra-familial social relationships have become more nearly egalitarian. One might reasonably expect to find these social trends mirrored in practices surrounding terms of relationship. It is our impression that they are so reflected, but few empirical data are available to support this view. The incidence of use of highly deferential terms appears certainly to have declined, and the most formally deferential among them have become old-fashioned or obsolete. Among our informants, a number of individuals had so little contact with collateral relatives as to be ignorant of the names of aunts, uncles, and cousins or to remember them only with difficulty. It seems doubtful that these circumstances might have applied a century ago. Finally, it is our poorly verified impression that the use of kin terms in address has dwindled; the old custom of addressing strangers by kin terms is fading; distant relatives tend to be addressed by name; and, excepting parents and grandparents, a nascent tendency toward the use of personal names or patronyms for close kin appears evident. The pattern seems to be the expectable — decline first at the shadowy peripheries of kinship and no observable decrease at its still vital heart.

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A PRELIMINARY REPORT ON UPLAND RICE IN NORTHERN LUZON

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UPLAND RICE is grown in swiddens[1] in two areas of the Mountain Province of northern Luzon: in one of them it is the major source of food, and in the other it supplements rice grown in mountainside terraces. Although the overall area in which swiddens are planted to rice gives no evidence of having recently expanded or contracted appreciably, the boundaries between them have been driven steadily outwards from the center of the Province by a dissemination of irrigated rice techniques which has been going on for a century or two and which is going on at the present time.

Pushing native memory back to living grandfathers' grandfathers' days, four distinct agricultural areas show themselves to have flourished in the Mountain Province at that time. One of these was the old terraced rice culture of the Ifugaos and central Bontoc; another was the shifting agriculture of the swidden-farming root-eating peoples of Benguet and adjoining Ifugao and Bontoc; a third was the dry rice culture of the Kalingas and Apayaos; and the fourth was the Bontoc-bordering part of Kalinga where rice was, and still is, grown by both methods.

The Ifugaos have become justly famous for their ability to wring a livelihood out of the sheerest heights of the Cordillera Central, and have evidently been using the same techniques for centuries, although the line of reasoning which attributes such ages as four thousand years to their Banaue terraces is not clear. They have been reported to understand the effects of trees upon irrigation and water supply, a knowledge which could have spared them the drying-up of terraces which has kept some of the peoples of western Bontoc from enjoying the full benefits of this agricultural technique. Just how old Bontoc terraces are, and whence they came, is not clear, but the demonstrable skill of the Bontoc in terracing even the most inhospitable slopes argues for long practice.

Entering Kalinga villages thirty kilometers downstream from Bontoc and fol-

1 The term *swidden* is used in this paper to mean an impermanent agricultural plot produced by the cutting back and burning off of vegetation sometimes called "slash-and-burn" agriculture. The term *swidden* was used by K. G. Izikowitz, *Lamet, Hill Peasants in French Indochina* (Etnologiska Studier, no. 17, Göteborg, 1951) and has been further recommended by Harold C. Conklin, *An Ethnoecological Approach to Shifting Agriculture* (Transactions, New York Academy of Sciences, ser. II, vol. 17, pp. 133-142, 1954).

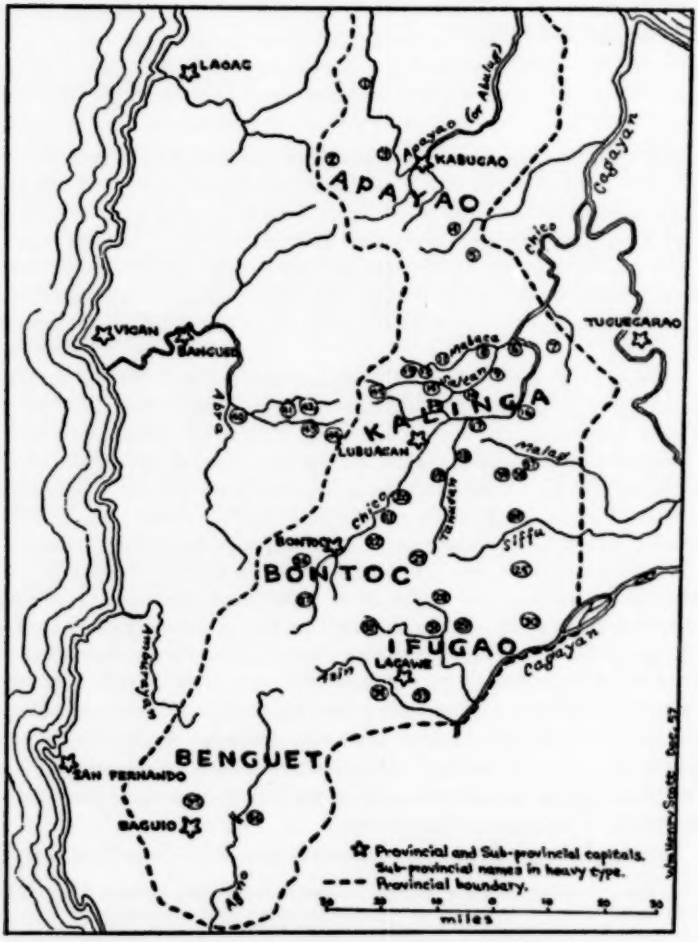

FIG. 1. Map of the Mountain Province, northern Luzon, Philippines.

lowing the Chico River to Lubuagan, the general intensity of terraced rice fields remains fairly constant — less than that of central Bontoc — but there is a steady decline in building techniques corresponding to the demands made by a steadily less precipitous terrain. Requirements are still milder below Lubuagan, and by Naneng, at which point terrace-building stops, the slopes farmed are too gentle to demand any real skill. This whole area supplements wet rice by farming swiddens on the surrounding hillsides — one of the characteristics by which the Chico Kalingas can be distinguished from the Chico Bontocs; i.e. the Kalingas of Bugnay grow rice by both methods, while the neighboring Bontocs of Bitwagan share the pan-Bontoc idea that rice cannot be grown successfully at this altitude by dry techniques. (Some basis for this exaggerated viewpoint is to be found in the fact that all montane peoples with a history of subsisting off upland rice have done so below the level at which pine trees grow.) The borrowing by these Chico Kalingas of Bontoc material culture — but, significantly, not social or religious institutions — in direct proportion to their proximity suggests that stone-walled terraces came to them from the same source. Whenever this first expansion of Cordillera farming techniques occurred, at least it was too long ago to have left any memory in the traditions known to living men.

The expansion of irrigated rice westward as far as Abra and southwestward as far as Lepanto seems to have come from central Bontoc (rather than Ifugao), at a considerably later date, and in two different waves. The movement westward was accomplished by a number of Bontocs accompanying the techniques, migrants who pressed up to the ridge northwest of Bontoc and flowed down over the back of the Cordillera into the Abra valley, and whose descendants almost as far north as Manabo to this day have retained their political and religious structure, and much

Key to Map of Mountain Province

Alimit	31	Bunhion	29	Natonin	24
Ambuclao Dam	36	Damag	25	Opul	30
Asiga	8	Danac	43	Pingad	27
Ayangan	33	Daoangan	44	Pinokpok	6
Bacari	37	Gobang	13	Polut	2
Balbalasang	45	Kiangan	34	Ripang	5
Balinciagao	15	Liang	38	Sagada	26
Banaue	32	Limos	10	Salegseg	14
Barlig	23	Lingey	42	Tabuk	16
Bayag	1	Mabaca	12	Taga	9
Bitwagan	22	Magaogao	7	Talifugo	4
Bonot	39	Manabo	40	Taloctoc	18
Buaya	11	Mayaoyao	28	Tanudan	19
Bucloc	41	Namultugan	3	Tinglayan	20
Bugnay	21	Naneng	17	Tublay	35

of their language, in Tinguian houses and clothes.[2] Dissemination into Lepanto probably was the result of a northern movement on the part of the Kankanays who, judging from the fact that they do not share the Bontoc speech, must have come into contact with those terrace-builders when Bontoc economic superiority was impressive enough to inspire imitation of Bontoc religion and social set-up too. Western Bontoc oral literature makes reference to western migrations in what must have been the mid-19th century, and the grandfathers of living men in Sagada used to tell how in their youth the procurement of a few bundles of rice as wages for labor in central Bontoc was considered most fortuitous.

By the end of the Spanish regime, this centrifugal diffusion had carried irrigated rice throughout Benguet, probably from Ifugao as well as from Bontoc, although not to such an extent that it has even today replaced root crops (camote and taro) as the universal staple. (At the time of the introduction of wet rice, Benguet was evidently undergoing its second major crop change, for a pre-camote day when taro was the staple is echoed as far north as Sagada where the agricultural year is ritually begun by the planting of three taro roots.) This dissemination took place, and is taking place still, in two stages: a first when "only the rich" had rice fields, and a second when even the middle class possessed them. In an area where terraces are old, their possession might reflect inheritance or, indeed, be a source rather than an effect of wealth, but where the techniques are new the possession by the wealthy implies that the builders were hired labor. At the present time, however, even in the southern extremes of the Province where terraces were introduced in the memory of living men, natives claim to have the requisite skill for building their fields although admitting that they hire wall-builders from Kiangan and Pingad "sometimes."

At the time of the Spanish-American War, wet rice techniques were in the process of introduction into the northern Kalinga mountains along the Saltan and Mabaca Rivers, areas mainly below the level of the pines but nonetheless areas unable to produce enough upland rice to support the population without recourse to root crops or, in a limited area, bananas. Introduction into this area was accomplished by hired labor from the higher Cordillera, and at the present time it is possible to find natives of the Chico River from Lubuagan to Bontoc earning carabaos throughout northern Kalinga by building terraces. If it is not true that

2 Fay-Cooper Cole (*The Tinguian*, Anthropological Series, Field Museum of Natural History, vol. 14, no. 2, 1922, pp. 395-398) believes that Abra terraces are very old, quoting Spanish sources referring not to terraces but to irrigated rice, and attaching great antiquity to Tinguian oral literature describing a day before the introduction of wet rice. My own observations, unfortunately, do not include northern Abra. The perhaps atypical groups I have visited — the Balbalasangs in Bucloc and the Bontoc-influenced people south of Manabo — give no evidence that their terraces are very old.

every stone-walled terrace north of Lubuagan was built by somebody from south of Lubuagan, it is almost true. Daoangan above Danac (Abra) has twenty-eight families of Sadanga marriage or descent who annually travel around Abra and Kalinga building or repairing terraces. Only the people of Mabaca claim to have built all their own walls — and, a loyal Bontoc or Ifugao might say, they look it.

The happy combination of wet and dry rice which obtains in northern Kalinga today came in on a wave which washed against the northern border of the subprovince with sufficient force to carry it over the crest of the low mountains just south of Conner and into Apayao. This wave has almost reached its natural limits — the lowland boundaries of the Province — except for eastern Kalinga and upper Apayao. However, it may well be that these areas are in the process of being penetrated at this very moment. In Liang between Bonot and Taloctoc one farmer has built a few terraces, and so has a Benguet schoolteacher in Namultugan (Apayao). A Bontoc schoolteacher in Talifugo has not only started building terraces but has recently induced several other central Mountain Province terrace-builders to join him with their families.

This wave has by no means spent its force, however, considering the low degree of saturation outside the central tribes of the Cordillera. Neither Benguet nor Kalinga has terraced its valleys to the limit of available water supplies, and, since the same water running from from field to terraced field can irrigate a whole mountainside, it can generally be said that where one or two terraces have been built, more could be. There can be no doubt that the Mountain Province could support a vastly larger population than it now does — if that population were willing to farm like Ifugaos. Modern educational trends, however, are such that whether or not young mountaineers would be willing to farm like Ifugaos, they would not be willing to live like Ifugaos. Extra-montane manufactured goods are rapidly changing from luxuries to necessities and local economy is seeking to adjust to this desire for cash rather than food by concentrating upon non-precipitous areas where modern machinery and techniques can be employed and on the construction of transportation facilities to distribute such concentrated supplies. Indeed, what may be the first eddies of a reverse wave are already appearing: e.g., a modern Pinokpok farmer, producing a better yield by swidden than Bontocs do by terraces, advises young mountaineers, "Stop engineering the rocks up there; come on down here and farm!"[3]

In considering the spread of irrigated rice techniques, it must not be overlooked

3 "And bring your DDT," Dr Fred Eggan of the University of Chicago has noted in the margin of a copy of this report sent to him before publication, astutely pointing out that the presence of malaria at lower altitudes has not been a negligible factor in the settlement of the Mountain Province of agriculturists.

that all Mountain peoples, whether they have rice terraces or not, farm swiddens. In areas where irrigated rice is known, there is a direct correlation between wealth and prestige and the ownership of terraces, so that in any community the wealthy are distinguished by their ability to subsist on terraced rice and either have no swiddens at all or devote them merely to subsidiary foods. Even in terrace-famed Ifugao, only the very rich can eat rice they grew in their own terraces three times a day all year long, and in Bontoc, where a granary full of 15-year-old rice is by no means unknown, the poor subsist mainly on camotes grown in swiddens or rice earned from others by manual labor. In accruing the prestige attendant to a good supply of rice, those Kalingas who grow it by both swidden and terrace methods have an obvious advantage. Yet it is interesting that even in this area there are habitual differences in the supply that cannot be accounted for by geographic features; native and foreign observations indicate that there is some sort of inverse proportion between the amount of time farmers spend squatting on their haunches and the amount of rice they produce.

Literature on the Mountain Province attaches significance to a line of demarcation between wet and dry rice cultures, but this line has been moving so much and so long that it cannot now be correlated to more general cultural differences. The Keesings, whose remarkable study implies personal observation of more widely diversified areas than that of any previous investigator, recognized this in trying to separate at least one social characteristic from agricultural patterns: the distribution of houses into scattered or concentrated groups.[4] They were forced to label Tinglayan a "mixed" area, and further investigation would have indicated how widespread and confused such mixing is. Only a longer study of swidden variations correlated with other cultural details will clarify whatever pattern really exists. Considering a day before Bontoc-Ifugao wet rice techniques started spreading, it might seem that swidden farmers did not make towns while sedentary terrace-builders did. Yet the Ifugaos have always had scattered kinship groups throughout their terraced mountainsides, while the Bontocs have developed veritable city organizations. In the Tanudan district of Kalinga is one of the most crowded "urban" settlements of the Province, completely lacking the political structure of the smallest Bontoc village. In areas where terraces were introduced to a root-eating people, the northern Lepantos build Bontoc-style villages while the Kankanays live in almost inaccessibly scattered groups. On the other hand, in the days of tribal warfare, the swidden-farming Apayaos maintained stockaded vil-

4 F. M. and M. Keesing, *Taming Philippine Headhunters: a Study of Government and Culture Change in North Luzon* (London, 1934), p. 40, diagram 3.

lages while the swidden-farming eastern Kalingas took to the treetops in groups of one or two families.

There is, however, a legitimate division in montane agricultural techniques which does reflect religious and social patterns: the areas where rice is grown in swiddens as opposed to areas where root crops are grown in swiddens. The Isnegs and Kalingas did and do grow upland rice; the Ifugaos, Bontocs, and Benguet did not and do not.[4a] Along the Chico River this line is easy to locate: it falls between Kalinga Bugnay and Bontoc Bitwagan, as has already been remarked. Stripped of such physical characteristics as are easily borrowed, made available by contact with extra-montane merchants, or dictated by local natural resources, the Bontoc-appearing Kalingas of Tinglayan and the Moro-appearing Kalingas of Pinokpok can be recognized as members of the same ethnic group. On a broader scale, all these Kalingas share with the Apayao fellow swidden-farmers a number of religious convictions pertaining to rice-growing which are not found in the south, chief of which is a female rice-begetting deity.

People who grow upland rice have a somewhat different attitude toward it from those who do not: all mountain peoples regard rice so highly they are loathe to admit how often they resort to camotes or other crops as a substitute, but the Kalingas and Apayaos almost never *do* resort to such substitutes, travelling long distances and bartering almost anything they can get their hands on for rice. Those areas of Kalinga where inter-village feuds still involve loss of life provide striking examples: along the national highway between Bontoc and Lubuagan it is possible during lean seasons to see parties of twenty or thirty fully armed warriors hiking past enemy villages with small motley loads of pigs, vegetables, and locally manufactured hats, baskets, pots, etc., all to be exchanged in a friendly barrio farther on for rice.

Exceptions to this general rule are rare and probably indicate migratory stresses carrying people into areas or circumstances where it is literally impossible for them

4a A note on upland rice in Ifugao: literature on Ifugao frequently refers to a boundary between wet and dry rice in that sub-province, but unfortunately I have not been able to locate it by personal observation. It is reported in the lowland extremes of the area occupied by Ifugaos: on the east, southeast, and south where the Cordillera Central declines toward the Cagayan River much more gradually than the western face drops to the Abra and Ilocos plains, a consideration which might suggest the encroachment of a non-Ifugao peoples and techniques. It definitely existed, and may still exist, north of Bunhion around Damag where available ethnologic data do not clearly establish the Kalinga-Ifugao border. It also occurs south of Kiangan and Lagawe where natives report it to be of lowland introduction. Alimit, south of Mayaoyao, has upland rice, too, but irrigated fields in that area have recently been rendered useless due to an "invasion" of earthworms which so riddle the soil that water cannot be retained, so the dry rice may be a recent introduction demanded by this loss.

to provide themselves with rice. The Kalingas of the lower Mabaca valley, for instance, used bananas as a substitute for rice, as amusing as this strikes other groups — and a former mayor of Pinokpok says that personal experiments during the Japanese occupation indicate that it is possible to do more manual labor on a diet of bananas than on a diet of camotes or taro. The Gaddangs of Bakari make use of wild guavas which flourish fortuitously in the season of little rice, and non-Gaddang observers report that they grow fat and thin with the seasons as a result of this alternation.

The agricultural techniques employed by Mountain Province farmers growing rice in swiddens are much the same all over Kalinga and Apayao, and can be outlined as follows:

1. Toward the end of the dry season, the small trees and underbrush are cut down, and after a few days of drying, the large trees are either felled, and those desirable for timber reduced to lumber, or left standing, with the branches removed, as trellises for climbing beans. All of this cutting was formerly done with a kind of battleax small enough to be wielded in one hand.

2. After from one to three weeks' drying, the cut area is burned. The fire does not spread out of this area because the edges have been carefully cleaned, because there are no large areas of grass, and because the jungle-like natural cover is too thick and green to catch fire easily. Large unburned pieces of wood may be removed for lumber or fuel, or piled up and burned a second time. The ashes are left on the field or gathered into piles if too thick.

3. As soon as it rains, planting starts, those engaged in it being restricted from receiving or feeding outsiders during the day. Holes are punched with a stick an inch or two deep about a foot apart, and from five to ten seeds dropped in and not covered over, soil being washed in by rain the same or following day.

4. Beans are planted around the edge of the swidden and at the base of the trees still standing. Bananas are occasionally planted among the rice about one meter or more apart and, more rarely, taro. Camotes for pig food are planted in a separate swidden. (Smaller swiddens are prepared for sugarcane to be used for the production of a sugar-based wine called *basi*, which is demanded on all social occasions by taste and religion, or for tobacco for sale.)

5. The swidden is, or has already been, fenced in, either solidly enough to resist attack by wild hogs, or with just enough material to discourage animals, especially deer, by virtue of its contact with human scent.

6. Within a month and a half the swidden is either once or twice cleaned of weeds, the worker digging them up or cutting them just below the ground with a short grub hoe. After this time the rice is too thick to walk through without damage.

7. Harvesting takes place in four or five months and is begun by, accompanied by, or followed by rituals performed by priestesses.

8. The swidden is rarely planted to rice a second time. After harvest, bananas, beans and whatever other vegetables are known are planted; only rarely are camotes planted. The swidden with bananas continues to reproduce fruit until the plants are choked out by regrowth of natural cover, or, in some areas, grass.

9. Only in very fertile areas is the swidden used the second time for rice. More common is the planting of vegetables and, rarely, camotes the second year. The swidden is not used a third time.

10. From three to five years is allowed for fallowing.

Each step in this procedure varies to some extent from place to place, and the thing which varies most significantly is the yield. A generalization on yield as coincident with geographic features may be made by distinguishing three basic types:

(1) Terrain characterized by low mountains and wide level riverbed plains, in which the yield exceeds that produced in Cordillera terraces, irrigated rice is unknown and terraces unnecessary, the natural cover replaces itself quickly, and the plow, carabao, and corn are coming into use.

(2) Terrain characterized by low mountains or rolling hills and less wide river valleys, in which the yield exceeds or equals that of highland terraces but is less than that of terraces built in the same area, the cultivated areas grow over with grasses that force the farmers up the slopes where the grasses are less vigorous, and many extra-montane vegetables have been introduced but not the plow.

(3) Terrain characterized by precipitous, but not high, mountains and river valleys rendered unsuitable for agriculture by seasonal torrential waters, in which the yield barely equals or falls short of that in the central Cordillera, the natural cover replaces itself too slowly to prevent extensive erosion, and the carabao has not been introduced for any purpose.

Examples of these three terrain types are given on pp. 99-105.

Swidden farmers employ only three tools: one for cutting, one for weeding, and one for harvesting. The cutting tool was an ax, and still is in Apayao but has been replaced by a bolo in most of Kalinga. The weeding tool is a short grubbing hoe which requires a branch with a natural acute angle in it for its handle; this tool seems to have undergone no modification within the memory of living men. The harvesting knife used to vary from a piece of sharpened bamboo to several distinct types of metal blades, but tracing them has been made difficult by the spread of one of these types in the past fifty years to groups who used not to have it.

The axes traditionally used for clearing swiddens are those more or less accurately referred to as headaxes. (The bolo is probably a modern introduction, having been known in the Mountain Province two generations ago only in the western extremes facing the Ilocos provinces. The Ifugaos have a bolo-like weapon which is more accurately a sword; that is, unlike the bolo, which is basically an overgrown knife, it has a pointed piercing end and is double-edged.) Most Kalingas formerly had two kinds of axes: one with a wide solid blade and a long straight cutting edge for working, and one with a thin slender blade and a short curved cutting edge terminating in a hornlike point used for fighting. (In a few areas where metal tools were hard to come by, the latter type had to serve both purposes.) The former is the style which is still the common fuel-gathering tool of the central Bontocs and is nowadays known as the "Bontoc headax." The latter has disappeared from actual use but was so much an aristocrat among weapons with aesthetic appeal to even a foreign hand and eye as to survive throughout the northern half of the Province as an occasional heirloom and, indeed, to be still manufactured in Bontoc in rather stubby imitations. This is the weapon known as the "Kalinga headax" and it was known to the Apayaos and Tinguians, too. Its most famous producers were the blacksmiths of Ba!balasang who were known among their neighbors not only for the manufacture of this weapon but for the effectiveness with which they applied it, and who not inconceivably might have been its introducer or perfecter (or inventor?).

The Apayaos had and have two distinct axes of their own, one being similar to the Bontoc style but having an edge with a shallow S-curve, the other being so strange it has to be seen to be described or believed. Although the latter of these two is the heavier and therefore preferred for felling large trees — many of which are six feet in diameter — both kinds are today in omnipresent use and natives are unable to assign separate origins, purposes, or distribution to them. On trails from one end of Apayao to the other, either kind is likely to show up tucked into the belt of a passerby. In the day of tribal warfare — and it might be pointed out that killing is less frequent today in highland Apayao than in any other part of the Province — the elegant Kalinga headax was also known, but the Apayao used any of the three for in-fighting and prominent men boasted an arsenal of proportions unknown elsewhere in the Cordillera.

The distribution of various types of harvesting knives, not only among swidden-farmers but all over the Mountain Province, is confusing. The Kalingas themselves think that "any knife" is used (which probably reflects the rarity of blacksmiths through much of Kalinga), although often reported is a kind of back-bent blade

also used in Mayaoyao, in which the back of the blade forms a 160° angle with the handle. The use of the peculiar and ingenious *lakom* with its double-crescent blade has definitely spread in lower Kalinga and lowland Apayao in the past several generations, and its early distribution would be most significant if it could be reëstablished. Cole reported it in use among the Tinguians, Javanese, and Sumatrans a half century ago,[5] and today it is used by such diverse peoples as the Yakans of Basilan and the Ifugaos of Banaue. Cole also reported it for Apayao, but presumably only the Abra-bordering area since the highland Apayaos still use a most distinctive tool of their own. This is an instrument called an *iko* and it is worn as an ornament in the hair by women. It has an edge with the distinctive shallow S-shaped curve of one of the two types of Apayao axes, and presents the appearance, indeed, of a miniature ax of this type.

The distribution of houses among swidden farmers was formerly influenced by two conflicting considerations: the desirability of being near the swiddens and the necessity of close neighbors for mutual protection. Whatever the old patterns were, however, they have now been greatly modified by two generations of outside influence. Extra-montane law and order has emboldened the farmer to more mobility and independence than he knew before, and the introduction of modern firearms has rendered such defensive devices as treetop houses useless. At the present time, throughout most of Kalinga there is a village nucleus of a dozen houses either near each other or actually in a double row, with other houses scattered singly or by two's and three's nearer the agricultural plots. From three to five years are the average times reported for the shifting of these houses near the swiddens (reported by people other than their occupants, incidentally). It is doubtful that there is a treetop house still standing in Kalinga, although in the eastern Gaddang limits of the sub-province there are a few lone houses elevated on 20- or 30-foot legs. (It is quite possible that such elevated dwellings were only resorted to in times of special hostility or in certain seasons, as seems to be the case among the supposedly tree-dwelling Tiruray of Mindanao.) The older pattern in Apayao is still clear: large houses capable of accommodating as many people as a father was capable of keeping home were built in stockade-protected villages, but smaller one-family houses were maintained in each swidden area and occupied seasonally. A hangover of this pattern is the fact that Apayao granaries are much more likely to appear in between the houses than in Kalinga, where the usual pattern is a few granaries on the outskirts of the village and the rest scattered through fields.

The ownership and inheritance of swiddens is a difficult subject to investigate

5 *Loc. cit.*

because it is in this area that the enforced abandonment of old patterns under the American and Philippine governments strikes closest to the heart of native economy. It has been a fifty-year problem of government officers to induce cashless Mountain Province farmers to apply for titles to their real estate when such application entails both an immediate and a presumably perpetual drain on personal resources in terms of fees and taxes. Land which produces a crop only once or twice is especially liable to such problems. Worse yet, swiddens are in themselves technically illegal. Comments upon ownership and inheritance according to native custom, then, have to be based on isolated bits of information and comparative data from anachronistic sources.

In areas where terraced rice fields are the standard of wealth, the pattern for inheriting swiddens is this: the swiddens are not earmarked as individual inheritances, but the descendants of the man who first cleared them have right to the land after many years or even generations of disuse. No Kalingas or Apayaos interviewed knew cases of actual inheritance of swiddens in accordance with local custom law, but those interviewed happened already to have filed claim on their own upland farms and received legal title to them, an atypical situation. Both Kalinga and Apayao peoples attach much greater importance to the accumulation of movable property than highland tribes to the south, and it is commonplace to find a collection of gongs, beads, and jars of truly startling face value in local economy housed in the flimsiest bamboo hut. This suggests that real property was not of much importance as inherited wealth among swidden farmers.

The religion pertinent to upland rice farming is another difficult field for investigation, not only because of the attrition due to government and missionary education, but also because agricultural rituals were performed by women who are nowadays treated with amusement or ridicule, when this subject is brought up, by those younger generation males on whom the extra-montane investigator is dependent for translation. Moreover, lack of native terms for such general concepts as "ritual" or "sacrifice" or "prayer" makes it hard to collect data on the activities of a priestess whose agricultural rites appear to even her own children as an old woman's puttering around, collecting grasses, and muttering a few sentences of little consequence and no comprehension. It may be that all areas formerly had planting rites even as they now all have harvest rites or clear memory of them. At the present time there is a definite distribution of planting rituals: western highland Apayao and Abra-influenced Kalinga have them, but eastern Apayao and Kalinga do not. This coincides fairly well with variations in fertility and consequent abundance of rice. Indeed, it can be carried one step farther: in Chico Kalinga where

rice is grown in both terraces and swiddens, even the harvest ceremonies are disappearing, diminishing, or completely lacking.[6]

The types of ceremonies vary a great deal, but generally those of Apayao are more important in the life of the people than those in Kalinga, involving special costumes and valuable heirloom beads for the priestesses and the sacrifice of animals by the wealthy. In Kalinga, on the other hand, the sacrifices never or rarely include livestock or fowl, being glutinous rice cakes instead. In both areas, however, there is a tradition of a female divinity of the rice, a concept either lacking or forgotten among the terrace-builders of the central Cordillera, and the use of various grasses and twigs in planting rites. Planting involves restrictions in all areas on receiving or feeding guests, and in some areas on sexual activity or the meeting of strangers. Harvesting is accompanied by similar taboos, plus certain dietary restrictions or the requirement of having a good meal (off a sacrificed animal, presumably), and in one area at least the kindling of new fire. Only among the far eastern Kalingas or Gaddangs were there any reports of consulting bird omens before commencing swidden-clearing.

Swidden farming reaches its peak productivity in the wide flat riverbeds where the Chico tributaries join that river at the Tabuk plain just before it itself flows into the Cagayan. In most of this area the plow and modern agricultural techniques have been introduced, but there are still parts of Pinokpok, where the Saltan flows into the Chico, which demonstrate just how fertile these wide flat valleys can be. The following details were noted in Taga, the municipal seat of Pinokpok, about ten kilometers up the Saltan from its junction with the Chico. Here the ground is so fertile that untended cabbages fight their way up in a field of weeds and flourish, and where a swidden abandoned only two seasons already has fifteen-foot trees growing on it.

The clearing of swiddens in Taga traditionally comes in the beginning of the dry season — at a time set in the old days by the flowering of certain trees — with the use of headaxes of Bontoc style, occasionally made locally but more usually purchased from Banao (i.e. Balbalasang and neighborhood). The trees are left standing, the underbrush and grasses being cleared first, and a week or two later the small trees are cut about a meter above the ground and the large ones left standing with the branches removed. The branches and larger brush are piled up and left to dry for a month; then the area is fired. No effort is made to control the fire, but the uncut surrounding areas are so thick and junglelike as not to catch

6 Governor Bado Dangwa once asked me, in reference to the distribution of rice from areas producing a surplus, where I thought new roads should be built. "Wherever the people don't pray for rice," I replied.

fire easily. Five days later, when the area is cool enough not to burn the feet, the unburned branches are piled up and burned again. The ashes are left on the ground, to be washed away by the rains, or if too thick, gathered into small piles. Now the planting begins, without any kind of harrowing.

In planting, a man takes a sharpened stick in each hand and strides across the fields, driving holes in the soft loose soil about an inch deep and about 40 cm apart. A second man follows a few steps behind him and just to his right or left, and a third behind him, and so on. Following each man comes a woman with a long bamboo container — pointed at the bottom so that if a hole is filled in or skipped, a new one can be made — who drops from six to eight grains of rice in each hole, without counting them, bending over only slightly to do so with a marksmanship reported with awe by men, and a speed which enables them to overtake the men they are following. Twenty men and twenty women can probably plant a hectare in three hours, taking a cavan of rice to do it. The seeds are not deliberately covered over. The planters are restricted from bathing until after they have eaten.

Sometime following the planting, the swidden is fenced against wild hogs, and visited from time to time to keep such fences in repair. A month and a half later, the swidden is weeded with a short grub-hoe. Beyond this it receives no attention until harvest, which comes within four or five months from the time of planting. Tillering for each hole is extensive: from twenty to forty stalks crowd an area as much as ten inches in diameter. The edge of the swidden is planted with various kinds of beans, casava, and taro. The little piles of ashes are known to be especially fertile and are planted with taro. All the trees still standing are planted with climbing beans, plants which bear all the way to the top, so that if the tree is too rotten to climb all the way up, it is cut down in order to harvest. The beans are gathered after the rice harvest, and the root crops stay in the harvested swidden for several months.

The harvest begins with a prayer by an old woman of the family (i.e. not a "professional" priestess) for a greater harvest, presumably as a result of a miraculous increase of the grain at this time, addressed to a female goddess of rice, Cabunian. Confusingly, the same name is applied to a male Cabunian who plays the role of a creator-god, the "giver of all good things"; informants, while not positive of the actual existence of two separate Cabunians, were positive that Cabunian was thought of as female when prayed to in harvest rites but not in other circumstances. Another prayer takes place before piling the rice in the granary, requesting that no harm befall it and that it not be exhausted too readily. The harvesting tool is a small metal knife, "any knife." The best yield is forty cavans per hectare, rather prolific by Mountain Province standards.

Following the harvest there will not be enough rain to plant a second crop of rice, but periodic rains are enough for corn, so the harvested swidden is usually planted to corn the same year. At the next planting season, the swidden is not reburned, merely cleared of weeds, and replanted with rice. This time they begin planting earlier, however, and place the holes closer together since tillering can only be expected to an area about five inches in diameter. Other than this, the planting and care is the same and the yield almost as great although, of course, produced from a larger number of seeds. The third year finds the swidden so grown over that few people plant it a third time to rice, not only because the yield would be uneconomical but because it is almost as easy to make a new one. Vegetables, however, may be planted in the swidden, or part of it, the third season. After this it will be abandoned, but can be cleared again after three fallow years and be expected to produce just as good results as it did when virgin.

Less fertile than such wide valleys as the lower Saltan at Pinokpok is a fairly well-defined area of about 120 square miles of low mountains and rolling hills in eastern Kalinga between Natonin and Tabuk. Here the people live in such scattered, shifting groups that it is not possible to locate even the nucleus of a village such as Taga, and a ten-year-old map is of little use in finding those pinpoints which would represent the present two- or three-house settlements. Typical of this area perhaps are the techniques which prevail throughout Bonot and Bakari, evidently among the Gaddangs of the latter place as well as among those Kalingas easily distinguished from them by language, social culture, and even physical appearance.

Here the selection of the swidden site — usually on the hillside because the grasses of the plains are so aggressive — is made by male heads of the families after an omen-observing reconnaissance in which the flight and cries of birds are noted. The vines and grasses are cut first, nowadays with a bolo but formerly with head-axes obtained through trade, and then the trees, with the large ones left standing shorn of branches. Drying takes about three weeks. The area is then burned, and reburned after the unconsumed branches and trees have been piled up. The ashes are left on the field. The edges of the swidden are carefully cleared to prevent the fire's spreading into any adjacent grassy areas. The local explanation for this care is that uncontrolled fires would destroy areas which could be turned into future swiddens. Since such future swiddens would by definition be burned anyway, this explanation implies a belief that a full growth, though not necessarily a virgin growth, of whatever the local forest cover is is necessary or desirable for a new swidden.

There is no planting ritual in the swidden itself, but old women in each family

pray over tongue-shaped cakes of glutinous rice in the house before planting begins. Men make the holes for planting by preceding women across the field with a heavy stick three inches in diameter, the soil being hard and resistant. The women follow and drop six or seven seeds in each of the holes, which are about a foot apart. The men handle the sticks by two methods: those skillful enough use one in each hand, while others use only one stick but sometimes drop the seeds in the holes themselves with the free hand. The holes are generally not covered over deliberately, but in some areas they are covered if there is no sign of rain, an unusual circumstance since these people usually wait until it rains to begin planting. If the holes are covered, the covering is done by sweeping them over with a bamboo rake. During the day of planting, no outsider must enter the house of the planters, and all those planning to help plant a certain field must arrive at the owner's house early in the morning. Men involved in planting must remain continent during the planting season.

The swidden is cleaned of weeds only once, both men and women going out to work with a short grub-hoe when the plants are about ten inches high. Tillering is expected to about three or four inches across. Although nowadays a good number of vegetables like squash and tomatoes are known, a decade or two ago very few vegetables were planted, except for those beans which were always planted on the edges of the swiddens and at the base of the still-standing trees without branches. Even camotes and taro were rarely planted and, in fact, the Gaddangs had taboos on planting anything other than rice. Corn was especially the object of their suspicion, many believing that boils could be caused simply by walking close to a corn field. The swidden may be planted a second year, but never a third.

Fencing is not required in the wilder areas, for there the pigs and deer avoid places frequented by human beings. In areas where farming has gone on for some time, however, such animals evidently become bolder through familiarity and so enter and root up the swiddens, especially just before the grain is ready to harvest. Most people build fences, therefore, not long before the harvest, and resort to all sorts of noisemaking gadgets which can be manipulated on long lines from their houses or from huts built near the swiddens for this purpose. Anybody who wakes at night will set these noise-makers in action. Solid fencing is rarely required; wild animals are usually stopped by even token fences or a few sticks or bamboo so long as they have the scent of man about them.

The rice is harvested after three or four months, depending on the variety. Men and women harvest together, using "any knife" — knives which turn out to be the simple straight-bladed kind useful for paring vegetables. The double-cres-

cent-bladed *lakom* or the back-bent blade of some montane peoples do not seem even now to have been introduced. Glutinous rice — called *inarkay* in the Pinokpok area and associated with a female rice goddess — is prepared for ritual feasting during the harvest and prayed over in the house by an old woman; unlike the tongue-shaped cakes prepared for planting rites, these are round. During the harvesting period, nothing may be killed for food, but some animal or fowl must be sacrificed (and eaten, of course) before using any of the new grain stored in the granary. Among the Gaddangs, this taboo begins as soon as the grain starts to ripen.

The mountainous areas of Apayao, such as the upper reaches of the Apayao (Abulug on maps) River itself, represent swidden farming at its most difficult, for here the mountains, while not high, are so precipitous that working with the short-handled grubbing hoe does not even require much stooping over. Here, too, the river beds are gigantic gutters, swollen for part of the year with torrential floods which not only impede travel but make farming their narrow plains impossible or risky.

The procedure for clearing swiddens in Namultugan (Bayag municipality) is essentially the same as that already described: the underbrush is cut first, then the timber, and then the area is burned twice and the ashes left on the field, in small piles if too thick. The tools used, however, are the two traditional types of axes characteristic of the Apayaos, which tools have not been replaced by the bolo. Since even the mountainous areas of Apayao are much lower than the Central Cordillera, and rainfall heavier, thicker brush must be cleared and much larger trees felled. Trees with trunks six feet thick ten feet above the ground are cut from a platform built around them at that height to escape the wide-spreading buttresses of their roots.

Planting in Namultugan in the old days was preceded by very elaborate rites conducted by a priestess in the swidden. Apayao parents keep as many of their married children at home as they can, building large houses to accommodate them all under one roof, but when the time comes to clear new swiddens, these big families split up into smaller groups and live in rather temporary houses in the swidden area. One priestess will serve her whole family, and she is usually the richest and commands some respect. The sacrifices usually consist of betelnuts and betelnut leaves, but perhaps one family in a hundred will be rich enough to butcher a pig at this time. The sacrifice is intended to attract spirits who will be helpful in making the rice grow and to appease those evil spirits who might do it harm. During the prayers in the swidden, a considerable list of spirits or deities is named, including Inargay, "the goddess of growing rice." An essential detail of these ceremonies is

that the priestess be dressed in her most valuable finery, especially wearing those heirloom beads which identify her for what she is to the spirits.

The planting is done by the women alone, who hold a heavy stick in the right hand and move it backwards and forwards a bit to widen each hole, dropping six or eight seeds in each hole as they go along. The ground is so hard that it is necessary to have a very heavy stick, so iron rods are inserted at the lower end for more or less of the stick's length. (In lower areas where Ilocanos have started the use of river beds for agriculture, a sharpened length of bamboo is sufficient.) In Namultugan, the hole is partially covered with dirt by the toes, but higher up in the mountains to the west the holes are not covered at all but are driven as deep as four inches, presumably to prevent the seeds' being removed by birds.

The swidden is cleared of weeds once or twice before the harvest. The panmontane grubbing hoe is coming steadily into more use, but the old method was to chop off the weed roots a little below the ground with the native ax. This work, too, is done by the women alone. Tillering amounts to only three or four inches, and the rice is ready for harvest in the fifth month. The *lakom* is gradually coming into use, but the common harvesting tool is still the unique Apayao *iko* which looks very much like a miniature of their headax with its S-curved cutting edge. Although the Apayaos consider rice to have no substitute, looking upon root crops as mere between-meal fill-ins, careful hoarding is required by the average farmer to stretch his supply through to the next harvest. It frequently happens that the new rice is in such demand that it has to be eaten before it has had time to dry, in which case it is "burned": a bundle is held in the hand and the heads ignited, permitting the wet grains to drop from the burning chaff unharmed but having, of course, a distinctive flavor. In the working season, two meals a day are normal, the field workers leaving so early (to avoid the afternoon heat) it would be inconvenient to cook first. Camotes and taro, however, serve as between-meal snacks.

Swiddens are generally planted only once, and can be cleared a second time in from three to five years. Bananas are not plentifully grown in this area, but smaller swiddens are cleared for sugarcane and, nowadays, tobacco, a crop which, when carried out across the mountains into Ilocos Norte or down the Apayao River to Aparri, is the old-fashioned Apayao's only cash crop. An unusually fertile swidden can produce a better yield of rice than the average terrace in Bontoc or Benguet, and possessors of such fields can boast one or two unopened granaries of rice. Experiments carried on in Namultugan by a native of Tublay municipality near Baguio indicate that irrigated fields in this area vastly outproduce swiddens. (The terraces in which this experimentation was carried out, incidentally, have since been destroyed in slides, a fate for terraces built by non-Bontocs which would not

much surprise those Bontocs who earn part of their living by travelling outside their own area building terrace walls for other montane tribes.)

It is in this area, too, where swidden farming has had its most noticeable effect upon forest cover, the complete destruction of all standing timber being retarded only by the number of trees in proportion to the number of farmers, a proportion clearly in favor of the farmer and so heralding the total denudation of all mountainsides eventually. An American missionary with agricultural training and experience who has worked in this part of Apayao for many years finds it impossible to doubt the connection between upland Apayao's disastrous erosion and loss of surface soils and these denuding techniques of Apayao swidden-farming.

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